THE SCHOOL OF ARCHAEOLOGY

The School of Archaeology is one of the premier departments in the world for the study and teaching of the human past. Comprised primarily of the Institute of Archaeology and the Research Laboratory for Archaeology and the History of Art, the School hosts a dynamic faculty, nearly one hundred undergraduates, and a large cohort of outstanding graduate students each year. It is one of the few places in the world where the many facets of archaeology come together to explore themes such as human origins and early hunter-gatherers, the ancient environment, classical and historical archaeology, and chronology.

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Introduction

Helena Hamerow (Head of the School of Archaeology)

The year just ended has seen members of the School of Archaeology engaged in an extraordinarily diverse range of research projects across many parts of the globe, in some cases launching new projects, in others bringing work to completion. Preparations for the Research Excellence Framework also gained momentum and will occupy ever more of our attention in the coming months. While the emphasis in the following report is on showcasing selected research projects, the introduction provides an opportunity to record key events in the life of the School over the past year.

The School has had the pleasure of welcoming a number of new arrivals: Dr Philipp Niewöhner has been appointed to a three-year Departmental Lectureship in Byzantine Archaeology and Material Culture, 300–1300, a post which is shared with Classics and History. New post-doctoral researchers include: Peter Hommel, who joined Jessica Rawson’s project on ‘China and Inner Asia (1000–200 BC): Interactions that changed China’; Chris Green, Anwen Cooper and Letty ten Harkel, who joined Chris Gosden’s project on ‘Landscape and Identities: the case of the English Landscape 1500 BC–AD 1086’, Chris as GIS Research Assistant, Anwen and Letty as Research Assistants working, respectively, on the prehistoric and early medieval periods. Jane Kershaw has stayed on after finishing her D.Phil. to take up a British Academy Post-Doctoral Fellowship on the bullion economy of Viking-Age England. Dr Maura Pellegrini, who transferred to the Research Laboratory in May 2011 as part of a Leverhulme-funded project on the Late Glacial in Italy, stayed on with Fell Fund support to lay the groundwork for a new collaboration between Archaeology and Earth Sciences to support the development of strontium isotope research. Dr Laura Morley joined the EngLaid project as Administrative Assistant and Konstantina Panousi was appointed Librarian of the Institute. Other post-doctoral researchers who began their work in the past year are Susanna Carvalho, who has joined the ‘Primate Archaeology’ project (see below), Laine Clark-Balzan, working with Jean-Luc Schwenninger on spatially-resolved optically stimulated luminescence and microdosimetry, and Michelle Wollstonecroft, who has been appointed to work on the SeaLinks Project, investigating the movement of plants, people and animals between Indian Ocean societies. Elaine Russell-Wilkes joined us to provide administrative support for the ‘Palaeodeserts’ project (see below). And while we are on the subject of new arrivals, we also warmly congratulate Lucy Palmer on the birth of her daughter, Bethan, in November.

A key event of another kind was the retirement of Liz Strange after many years as Receptionist at the Institute of Archaeology. Liz’s friendly smile and sympathetic ear (not to mention cakes) created a warm and welcoming atmosphere that has been appreciated by generations of students and staff. All in the School wish her a long and happy retirement.

We were also privileged to host a number of visiting scholars in 2011–12: Dr Ivo Stefan, lecturer in Medieval Archaeology from Charles University, Prague, here on a Gerda Henkel fellowship, and Dr Hajnalka Herold from the University of Vienna, also an early medieval specialist, here on a Von Humboldt grant; Dr Javier Rodriguez-Corral, from the Universidad de Santiago de Compostela, is visiting for two years.

Many, though by no means all, of the School’s current research projects are described in the pages that follow. It is gratifying to note that amongst these are several major new projects that commenced in the past year:

The five-year, ERC-funded ‘English Landscapes and Identities Project’ has now begun its work. The project
INTRODUCTION

The work of Professors Higham and Petraglia was recently highlighted by the journal *Nature* in two publicly accessible articles:


The Radiocarbon Accelerator Unit (ORAU) received very positive feedback from the NERC Radiocarbon Facility review, with a recommendation to NERC to renew the service for another five years. The ORAU also tendered successfully for the main radiocarbon dating provision for English Heritage. It is exciting to report that the process of setting up an ancient DNA laboratory at the RLAHA also began in the past year.

This year also saw work commence on two major Leverhulme-funded projects. ‘China and Inner Asia (1000–200 BC): Interactions that changed China’ (led by Jessica Rawson) is the first major project to be associated with the Oxford Centre for Asian Archaeology, Art and Culture, launched in October 2010. The project team is now firmly established at the Institute of Archaeology. More recently, an investigation into the ‘Earliest Symbolism and Cemeteries in Prehistoric North Africa’ (PI: Nick Barton) was awarded a grant for three years.

Finally, a major AHRC grant has been awarded to ‘The Atlas of Hillforts in Britain and Ireland Project’, a collaboration between the Universities of Edinburgh and Oxford, led by Ian Ralston and Gary Lock. Its aim is to record every hillfort in these countries and make these records available through an online resource and published atlas.

As financial pressures mount and amid continuing uncertainties regarding the future funding of Higher Education, external funding remains of paramount importance if we are to continue as a world-leading centre of archaeological research. Members of the School are therefore to be congratulated on their continuing success in this regard: the total grant income for projects that commenced during this year came to approximately £3.7 million. Such success in obtaining external grants will lay the groundwork for future achievement.

team, led by Chris Gosden, is seeking to understand the development of the English landscape from the middle Bronze Age to the Norman Conquest through the use of mapped data to explore continuities and changes in land use in different parts of England. The first conference relating to the project was held at Keble College in June.

The ERC has also funded two new projects this year: the first, led by Michael Petraglia, is examining how long-term climate change in the Arabian Desert affected early humans and animals and what responses determined whether they survived or died out over the last two million years. Satellite images have revealed a network of ancient lakes and rivers that once coursed their way through the sand. The images are the starting point for a ground-breaking research project which will study the landscape features and excavate sites likely to be of archaeological interest, using the network of water courses as a map. Researchers will use the latest dating techniques to pinpoint the ages of animal and plant remains and of different stone tool technologies and compare similarities and differences displayed in the region’s rock art, while stable isotopes of faunal remains will help us understand climate patterns and conditions under which the former desert inhabitants lived.

The second ERC-funded project to begin last year is a study of ‘Primate Archaeology: an evolutionary context for the emergence of technology’, led by Michael Haslam, which aims to characterize the archaeological signature left by primate tool-manufacture as a possible guide to understanding early hominin behaviours.

The Radiocarbon Lab has also been very much in the news. The earliest musical instruments found in Europe – flutes made of bird bone and mammoth ivory – have been dated to 40,000 years ago, several thousand years earlier than previously thought. The results were achieved by Tom Higham and his team, using an improved ultrafiltration method designed to remove contamination from collagen preserved in the bone. The same team was also able to demonstrate that bones found under the floor of a Bulgarian church and long claimed to be those of St John the Baptist do indeed date to the first century AD.
A high point of another kind came on 8 December, when the innovative work of ‘SeaLinks’ (PI: Nicole Boivin), an ERC-funded project examining the pre-historic emergence of long-distance maritime contacts around the Indian Ocean, was recognized at a reception at Buckingham Palace, hosted by the Queen and the Duke of Edinburgh. The event was in recognition of the role of adventurers and explorers and coincided with an exhibition at the Palace displaying items related to exploration and adventure from the royal archives. Innovative teaching within the School was also recognized by the Oxford University Student Union with the nomination of Nick Barton for an ‘Innovation in Teaching’ Award.

The School also undertook a range of ‘outreach’ activities, most notably at our training excavations at the Roman small town of Dorchester-on-Thames. This year’s season enabled us to reach a broad spectrum of the local community, as well as enthusiastic excavators from further afield. Residents of Dorchester itself joined us in excavating and processing finds, and also provided general logistical support. In addition to offering training to nearly 50 undergraduates from several departments across the University, we also welcomed three sixth-form students on work experience, several undergraduates from other UK universities, and over a dozen other members of the public to our Field School. Some travelled from as far as Spain, Norway and Australia to dig with us! We held an Open Day for the public at the end of our third week and, during a brief sunny break in the monsoon-like weather, welcomed over 250 visitors to the site for tours and displays of finds.

A certain amount of ‘bricks and mortar’ work has also been undertaken. The Institute refurbished its palaeobotanical laboratory, thereby enabling a larger number of students to take practical classes, and allowing microscopic images to be projected onto a screen for teaching purposes. Indeed, the Institute as a whole has begun to receive a major face-lift, following on from essential re-wiring. The full impact of this will only become apparent in 2013, but visitors can already see that an impressive transformation is being wrought.

Finally, it should be noted that the Institute’s highly successful 50th Anniversary celebrations in September 2011 have led to the creation of an alumni page on the School of Archaeology’s newly redesigned website. We hope that this will encourage former students (and others) to keep in touch and stay informed about current developments within the School.

October 2012
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Alexandra Kasseri (St Cross College)
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Kyungkyu Kim (Wolfson College)
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Defining Mechanisms of Red Sea and Indian Ocean Trade Between 3rd c. BC and 6th c. AD: Using Geoarchaeology and Spatial Analysis to Investigate Harbours at the Port City Archaeological Sites of Berenice (Egypt), Pattanam (India), Manthai (Sri Lanka) and Unguja Ukuu (Zanzibar, Tanzania)

Anna Kouremenos (Lincoln College)  
Elite Houses in Kissamos and Knossos (Crete): A Study in Emulative Acculturation

Kathryn Krakowka (St Cross College)  
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Michelle Langley (St Cross College)  
Curation of Magdalenian Osseous Projectile Points

Sharen Lee (Linacre College)  
Bayesian Methods for the Construction of Robust Chronologies

Laura Lewis (Keble College)  
A New Perspective on the ‘Modern Human Behaviour’ Debate: Early Microlithic Industries and Behavioural Flexibility in the Indian Subcontinent

Chen Li (Merton College)  
Han Dynasty (206 BC–AD 220) Stone Carved Tombs in Central and Eastern China

Yan Liu (Merton College)  
The Western Han Wooden-Chambered Tombs in the Mid-Yangzi River Region, South China (206 BC–AD 25)

Matthew Lloyd (Merton College)  
The Archaeology of Greek Warriors and Warfare from c.1050 to c.600 BCE

Lisa Lodwick (St Cross College)  
Archaeobotanical Assemblages from Late Iron Age and Early Roman Silchester: Assessing the Character of an Early British Urban Settlement

Jerome Mairat (Wolfson College)  
The Coinage of the Gallic Empire

Lara Mallen (St Hugh’s College)  
Raiding Relationships: The Role of the San in the Stock Raiding System of the North Eastern Cape and Southern Lesotho

Anat Marom-Rotem (Linacre College)  
Development and Application of an Analytical Method for Radiocarbon Dating Bones Using the Amino Acid Hydroxyproline

Javier Martinez (Lincoln College)  
Water Use and Supply in the Towns of Late Antique and Early Medieval Spain

Rebecca McClung (St Cross College)  
Understanding Social and Environmental Issues on the West Coast of Ile de la Reunion through Graffiti and Other Memory Markers

Mark McKerracher (St Cross College)  
Agricultural Development in Middle Saxon England

Kristine Merriman (Merton College)  
Organic Preservation in Archaeological Ceramics

Elizabeth Montgomery (Exeter College)  
Images of the Rural Economy on Mosaic Pavements in the Late Antique Levant

Wendy Morrison (Exeter College)  
Complex Assemblages, Complex Social Structures: The Upper and Middle Thames Valley 100 BC–AD 100

Sarah Neate (Linacre College)  

Luiseach Nic Eoin (St Hugh’s College)  
Functional Analysis of Grindstone Technology from the Middle and Later Stone Ages of Southern Africa

Erika Nitsch (Linacre College)  
Stable Isotope Evidence for Diet Change in Roman and Medieval Italy: Local, Regional and Continental Perspectives

Jayson Orton (St Hugh’s College)  
Late Holocene Archaeology in Namaqualand, South Africa: Hunter-Gatherers and Herders in a Semi-Arid Environment

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Charalampos Pennas (Wolfson College)  
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Laura Perucchetti (St Peter’s College)
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Guido Petruccioli (St Cross College)
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David Price (Wolfson College)
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Leonie Raijmakers (Merton College)
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Natasha Reynolds (Wolfson College)
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Benjamin Sabatini (Linacre College)
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Yurika Sakai (St Cross College)
Investigate the Scale of Human Mobility in England in the Roman and the Anglo-Saxon Period

Katia Schorle (St Cross College)
Strategies on Desert Frontiers: The Eastern Desert of Egypt, Libyan Desert and Syrian Desert in Comparison

Nichole Sheldrick (Corpus Christi College)
The Architecture of Roman Tripolitania: 46 BC to AD 300

Yuriria Silva-Velazquez (Linacre College)
Application of Transmission Electron Microscopy to Identify Pre-Hispanic Developments in the Manufacture of Maya Blue Pigments

Jane Smallridge (Magdalen College)
The Death of Memory: Remembering and Forgetting in Transitional Roman and Dark Age Britain

Christophe Snoeck (Merton College)
Diet on the Nile; Uncovering the Diet of Ancient Egyptians through Stable Isotopes

Gabriela Sotomayor (Wolfson College)
Ptolemaic Jewellery and Engraved Gems

Silja Spranger (Lincoln College)
Honorific Statuary in the Third Century AD

Ina St George (Linacre College)
The Role of Wall Art in the Neolithic at Çatalhöyük

Vajk Szeverenyi (St Cross College)
Interregional Interaction and Social Change in the Early Bronze Age of the Carpathian Basin, c.2900–2000 BC

Caroline Thurston (Wolfson College)
The Material Culture of Greece, 1200–600 BC. The Typological and Functional Development of Animal and Human Figures and Figurines from Mainland Greece and the Cyclades, 1200 to 600 BC

Christina Triantafillou (Keble College)
Imperial Building in Trajanic Rome: A Study of the Construction and Economics of Public Building

Alexander Vacek (Merton College)
Greek and Related Pottery from Al Mina. A Case Study of Production, Consumption and Distribution of Greek Pottery in the Eastern Mediterranean from the 9th to the end of the 7th Century BC

Elsbeth van der Wilt (Linacre College)
A Selection of Lead Objects from Heracleion-Thonis, Egypt
**Angela Vaughan (Keble College)**  
An Isotopic Study of Diet and Environment at Taforalt, Morocco

**Greg Votruba (Wolfson College)**  
Anchors and Mooring in the Ancient World

**Victoria Waldock (Wolfson College)**  
A Multi-Sensorial Analysis of Holocene Saharan Pastoralist Rock Art

**Veronica Walker Vadillo (St Cross College)**  
Maritime Archaeology of Southeast Asia. Nautical Angkor: The Social Life of Boats in the Khmer Empire

**Jennifer Wehby (St Cross College)**  
Investigation of the Agency and Expertise of Ancient Roman Builders through Material Analysis of Concrete Samples from Ostia, Italy

**Nicholas West (Wolfson College)**  
The Role of Small-Scale Sculpture in the Transmission of Classical and Hellenistic Greek Representational Forms in Antiquity

**Marlena Whiting (Lincoln College)**  
Travel and Accommodation in the East Mediterranean, 300–700: A Study of Networks of Communication, Travel, Infrastructure and Modes of Accommodation in Late Antiquity

**Rachel Wood (Lincoln College)**  
After the Achaemenids: Exchange, Transmission and Transformation in the Visual Culture of Babylonia, Iran and Bactria c.330–c.100 BC

**Carrie Wright (St Cross College)**  
Calcium Isotopes in Modern Biological Mammal Systems and Archaeological Skeletal Material

**Mu-Chun Wu (Hertford College)**  
The Spatial Construct of Social Relations: Social Transformation in Early Kau-Shi, Taiwan

**Rose-Marie Wyche (St John’s College)**  
The Afterlives of Late Antique Sarcophagi in Provence

**Maggie Ziriax (St Cross College)**  
Using Isotopic Analysis to Identify Migration: A Case Study of the City of Sanisera
The principal aim of this project is to investigate whether the first appearance of cemeteries in North Africa marks an important transitional stage in hunter-gatherers becoming more sedentary in their behaviour. Such adaptations are normally associated with the Neolithic but we believe this may have occurred many thousands of years earlier in pre-farming societies of the North African Maghreb. The objectives concern the comparative study of human skeletal material from sites in Morocco and Algeria for physical evidence of mobility, and involve the detailed analysis of health, nutrition and mortuary behaviour at the major site of Taforalt (Morocco). The question of intensification in dietary practices and for decreased mobility is also being addressed via the study of rich molluscan remains and other cultural evidence in the epipalaeolithic layers of this cave.

In 2011 effort was focused on completing data collection for the comparative study of human material, which involved visits to university and museum collections in Canada and the USA to record Capsian (late epipalaeolithic) remains from Algerian sites (De Groote, Post-Doctoral Assistant, and Humphrey, co-PI) and the Institut de Paléontologie Humaine in Paris to undertake radiographic scans of adult skeletons from Taforalt. The first of a series of papers of the newly excavated human burials from Sector 10 at Taforalt was published. These burials show no evidence for deliberate post-mortem modification of the kind reported in the earlier work of Roche. It is possible that the burials in our excavations, located in a recess at the rear of the cave, represent an earlier stage of the cemetery. It may also indicate that there was an elaboration of funerary behaviour over time at this site.

A major part of the molluscan analyses is now complete (Bell, co-PI). Initial results by Taylor (Reading Ph.D.) reveal an abrupt change in species diversity marking the beginning of major exploitation of snails for consumption. Other datasets (including charred plant macro-remains, large mammals, phytoliths) show that while the molluscs were the most obvious aspect of the economy of the upper deposits they were actually only one part of a diverse economy which involved a wide range of plant and animal resources.

Study of the epipalaeolithic artefact collections from Taforalt (J. Hogue, Oxford D.Phil.) reveals major subdivisions in the stratified assemblages. The chronological development of the cultural layers can now be fully documented via nearly 50 AMS 14C dates (on charcoal, bone, ostrich eggshell) from the Oxford Radiocarbon facility that cover the entire timespan of the epipalaeolithic in this cave. Study of lithic raw materials and heat-affected natural rocks, as well as of worked bone and marine shell (including dentalium beads), is continuing. Artefact collections from other sites in Morocco and the Maghreb are also being analysed by Hogue and Barton (principal-PI) for comparative purposes.


For further information, see the Cemeteries and Sedentism website: [http://web.arch.ox.ac.uk/leverhulme/](http://web.arch.ox.ac.uk/leverhulme/)

*The Cemeteries and Sedentism Project is principally funded by the Leverhulme Trust and grants from the British Academy and the Natural Environment Research Council. The Institut National des Sciences de l’Archéologie et du Patrimoine granted permission to conduct this project. The work has been carried out in close collaboration with INSAP, Reading University, UK, the Natural History Museum, UK, and Römisch Germanisches Zentralmuseum, Mainz, and by researchers at a number of UK institutions.*
Investigating Early Farming through Stable Isotope Analysis of Crops

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Recent research suggests that cultivation and herding in the Middle East developed in a similar time-frame, culminating in the emergence of full-blown agriculture based on domesticated crops and livestock from the later ninth millennium cal BC. The early suite of crops and livestock (wheat and barley, pulses and flax, together with sheep, goats, pigs and cattle) went on to spread together across Europe. This combined crop-and-livestock ‘package’ hints at some sort of mixed farming. But what was early farming like? How were crops grown and animals raised? This kind of understanding is crucial for explaining how farming emerged and became established, as well as its long-term consequences. The NERC-funded Crop Isotope Project, now completed, is the first attempt to assess systematically the importance of manuring in early farming communities.

To assess the relevance and extent of manuring among early farmers, we needed to learn to identify it archaeologically. Agricultural soils are rarely preserved, so the primary evidence for ancient cultivation comes from crop remains – grains and inedible plant parts, ‘chaff’, preserved mostly through charring, which renders the material biologically inert but preserves its shape. Previous research showed that mineral fertilizer and farmyard manure have different effects on which forms of nitrogen get incorporated into the soil and taken up by crops. Mineral nitrogen is rich in the lighter stable isotope (14N), whereas farmyard manure has more of the heavier form (15N).

We focused on seed crops grown by farmers of the Neolithic and the Bronze Age periods and on how manuring affected their isotope ratios. To assess these relationships, we collected modern crop material from experimental stations across Europe, including Rothamsted in Hertfordshire, set up our own experiments – at Sutton Bonington, near Nottingham and in Syria, near Aleppo – and visited regions where crops are still grown in traditional ways, including Asturias in Spain, Transylvania in Romania and Evvia in Greece.

Our modern results have shown that intensive manuring has a dramatic effect on nitrogen isotope signatures in both grain and chaff of wheat and barley; moderate manuring has a correspondingly modest effect. This means we can tell how much manure was applied, if any, from nitrogen isotopes in cereals. Pulses like peas and lentils work differently: they fix nitrogen from the atmosphere, so manuring has a comparatively slight impact on their isotope ratios.

All this sets the stage for assessing archaeological crop material. While we are still assessing the archaeological results, the general outcome is that manuring was widespread in Neolithic farming communities across Europe. Our results suggest that, while early farming practice was geared towards sustainability, the ‘long-term investment’ of manuring encouraged families to claim ownership of land, with social consequences culminating in the fixed inequalities of some hierarchical Bronze Age societies.

For further information, see ‘Manuring and stable nitrogen isotope ratios in cereals and pulses: towards a new archaeobotanical approach to the inference of land use and dietary practices’: http://nora.nerc.ac.uk/15478/
Exploring Ancient Indian Ocean Connections in East Africa

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Africa’s place in the early Indian Ocean world remains an enigma. Several sources suggest extensive contacts and trade between East Africa and other parts of the world as early as the beginning of the first millennium AD. The *Periplus of the Erythraean Sea*, for example, a first century mariner’s guide to the Indian Ocean by a Roman author, describes a thriving trade between East Africa and Arabia, featuring the export of such African goods as ivory and tortoise-shell, and the intermarriage of Arabs and Africans. No archaeological evidence currently exists to corroborate this reliable historical document, however. Meanwhile, linguistic, genetic and ethnographic evidence also indicates early contact between East Africa and distant Southeast Asia. Not only is this suggested by the presence in East Africa, potentially from an early time period, of Southeast Asian crops like banana, yam, taro, rice and coconut, but the people of the island of Madagascar off the East African coast speak a Southeast Asian language. However, again, archaeology is silent on these otherwise very clear connections.

Attempting to shed light on the continued enigma of East Africa’s Indian Ocean connections is one of the key activities of the Oxford-based Sealinks Project. To this end, the project is undertaking archaeological, botanical and genetic studies in the region in collaboration with a variety of African and other international institutions. One of the key studies involves the investigation of the Southeast Asian crop taro, which is grown today throughout Africa and the rest of the Indian Ocean but hails originally from Southeast Asia. Samples of modern taro, as well as a medieval taro specimen from Egypt that has yielded ancient DNA, are being analysed to try to understand better the route or routes by which taro entered Africa, as well as the timing of its arrival. In a similar way, genetic studies of contemporary animal species in Africa, such as the rats and mice that travelled with early colonizers and traders, are also being undertaken to shed light on East Africa’s wider maritime connections.

Also critical to the Sealinks Project are the methods of archaeology. The project has undertaken excavations at a series of habitation sites along the East African coast to try to understand when both exotic goods and non-native species of plants and animals arrive in the region. In 2011, sites were excavated in both Kenya and Tanzania. On the island of Zanzibar, the project focused on a small village site in the north of the island, as well as one of East Africa’s major early ports, located in the far south. The work there has just begun, but the results already provide evidence for a wealth of contacts, with pottery from as far afield as the Middle East, India and China being unearthed, along with valuable items like a bronze mirror that may have been fabricated in China, and over a thousand different glass, agate, carnelian and even gold beads, many of which came from distant parts of the Indian Ocean. Further artefactual and chronometric studies will be critical to understanding how the sites fit into the jigsaw puzzle of East African prehistory. Other sites also need to be targeted elsewhere in coastal and island East Africa, as well as Madagascar, before the patterns will be clear, and the enigma resolved.

In addition to these various project studies, the Sealinks Project has also focused on fostering dialogue and collaboration amongst scholars interested in Africa’s early Indian Ocean past. In April of 2012, a second major
Africa-focused workshop, 'East Africa in the Indian Ocean World 2' was held over two days at Jesus College, Oxford, featuring a wide range of archaeologists, geneticists, linguists, palaeoenvironmental researchers and others from around the world. The workshop offered an opportunity for researchers to present new findings and discuss major research challenges and questions, and highlighted current excitement about the fascinating studies currently under way in the East African region.

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My recent research is largely focused on the use of geo-archaeological techniques to answer questions about environmental change and human mobility. This has followed two distinct themes.

Firstly, the use of geochemical and sedimentological data to explore the record of environmental change in North Africa, particularly in the Moroccan Palaeolithic sites of Rhafas, Taforalt and Dar es-Soltan 1 with the aims of constructing a record of environmental change over the last 130 ka and how this has impacted on the human populations within this area. This work is using stable isotopic analysis of various substrates including tooth enamel, bone collagen and ostrich eggshell in conjunction with detailed sedimentology and sediment micromorphology.

The second theme of my research is the use of geochemical techniques to look at community structure and to test for local versus immigrant individuals in various human skeletal assemblages. This ongoing work focuses on the use of oxygen, carbon and strontium isotopic analysis of human tooth enamel to reveal a geographically distinct chemical signal formed during the growth of the tooth. I am applying this technique to human assemblages from a wide range of time periods and locations, including the Neolithic portal tomb at Poulnabrone in the west of Ireland, Roman burials from Gloucestershire and Kent, and Saxon cemeteries in Oxfordshire, Hampshire and Essex, as well as later medieval cemeteries in Oxford and Cheshire.
Salt was a highly sought-after commodity in the pre-industrial world. Certain regions in western Asia feature accessible halide outcroppings, allowing early mining and exploitation of this important natural resource. The Douzlakh Salt Mine in Chehr Abad, in the province of Zanjan, produced a very high quality vein of halide, making it an appealing venue for early miners.

This region, however, is also prone to earthquakes. One recorded earthquake, for the region of Rayy c. 350 BC, may well have had a direct impact on the mine, as bodies were trapped in a collapsed mine shaft. Another possible cause of these accidents is from a collapsed mine shaft due to the imperfect mining techniques that were practised. Owing to the highly alkaline surroundings in which they were buried, they became naturally mummified and their clothing nearly perfectly preserved. The first mummy was discovered by chance in 1993. More mumified bodies (or partial remains) have been subsequently recovered in archaeological excavation which was carried out by an Iranian team in 2004–5, and more recently with the current international collaborative project, with remains now totalling at least eight individuals. The timeframe for the historical use of the Chehr Abad mine spans two distinct phases, as evidenced by the series of radiocarbon dates.
analysed at the RLAHA. One phase is within the later Achaemenid period and the other during Sasanian times. It appears likely that there were two distinct mine collapse events, one occurring around 470 BC, and the second around AD 500.

Mummies are usually prepared for mummification, but sometimes they occur naturally. However, it is rare to have mummies in accidental burial and to be recovered through controlled excavation. Thus, we have a representative example of everyday dress of workers and elites, local and non-local people who were involved with the extraction of salt, from two discrete time periods spanning nearly a millennium. Moreover, the well-preserved textiles and other organics (wood and leather, and feathers) are from a region not generally known for organic preservation.

The textile remains from these bodies are quite varied. Some are of complete garments or partial remains of dress. The rest are fragments of textiles used with equipment, as makeshift handles, for example, or of aprons and reused rags and carrying sacks for working in the mine. Thus, the array of textile fragments helps to paint a picture of daily life working in the salt mine.

The picture is being further developed from insight gathered from more detailed scientific study of the textile remains, and some of the results are surprising. The quality and technical craftsmanship of the textiles are quite varied – some fabrics are very rough and plain, others are quite sophisticated and fine, with highly skilled spinning, weaving and dyeing. Two textiles from the Sasanian period show a sophisticated compound weave, helping us to reconstruct a part of textile history that is at present poorly understood.

The comparison between the earlier and later textile fibres is also interesting; there are distinct morphological changes in the sheep’s wool in the Sasanian period – possibly due to a later influx of Roman sheep breeds. Furthermore, isotopic study of the wools shows that certain dyed threads in multi-coloured cloth were derived from an outside area, giving us insight into the organization of cloth production in Achaemenid Iran.

For further reading on the Chehr Abad Salt Mine Project there is a featured ‘Gallery’ article on the project in a forthcoming issue of Antiquity. There are also several forthcoming articles on the textiles from the Chehr Abad Project listed on the author’s webpage:

http://www.arch.ox.ac.uk/salt.html
http://www.arch.ox.ac.uk/IG1.html

and the official project website:
http://www.saltmen-iran.com/tiki-index.php

‘Below the Salt’ is a research project led by Professor Mark Pollard (University of Oxford) and Professor Don Brothwell (University of York). This is part of a larger international research project being carried out in collaboration with the German Mining Museum in Bochum, the Iranian Center for Archaeological Research (ICAR) in Tehran, and the Research Laboratory for Archaeology and the History of Art at Oxford. Research is supported by the Arts and Humanities Research Council (grant AH/H010998/1).
The English Landscapes and Identities Project will look at the long-term history of the English landscape from 1500 BC to AD 1086 combining evidence on landscape features, such as trackways, fields and settlements, with the distribution of metalwork. The project looks at a crucial period of English landscape history from the start of the settled agricultural landscape to the medieval world, which was directly ancestral to that of modernity. The project will combine a mass of digital data from English Heritage’s National Mapping Project, local Historic Environment Records and the Grey Literature with that on artefacts held in the Portable Antiquities Scheme and other artefact databases, such as the Celtic Coin Index and the Early Medieval Corpus of single coin finds. Not only will we analyse a mass of data on a scale not attempted previously, but we will also develop a theoretical framework for analysing landscape and artefactual change over the long-term as it pertains to issues of identity, community and ontology. Working from the Bronze Age to the early medieval period reveals great evidence of change, but also surprising continuity in terms of land divisions and forms of settlement; what is less clear is whether this is echoed in the places and types of artefact deposition. People in the past built communities, which included humans and materials, but also various spiritual forces. The project is developing collaborations between English Heritage, Historic Environment Records, the Portable Antiquities Scheme and the Archaeology Data Service. The main outcomes of the project will be a website, which will provide a search tool which will allow broad access to the sources of data underpinning the project.

The English Landscapes Project is a uniquely ambitious attempt to understand the social and material forces animating a series of pre-modern societies as they worked themselves out on the extended form of landscapes and the condensed relations contained in artefacts. The project is not purely empirical and will develop theory concerning the relations between people and the material world, providing model value for attempts to understand landscapes and artefacts in other areas of Europe and beyond. The project will run between 1 August 2011 and 31 July 2016. The researchers on the project are: Chris Gosden, principal applicant, Anwen Cooper (prehistory), Chris Green (GIS), Zena Kamash (Roman period), Laura Morley (administration), John Pybus (semantic web), Letty ten Harkel (early medieval), Xin Xiong (semantic web).

We are very grateful to the European Research Council for funding this research and to numerous people in English Heritage for the provision of data, including Simon Crutchley, Pete Horne, Lindsay Jones and Barney Sloane. We would also like to thank the many HER professionals we have been working with, as well as Roger Bland and Dan Pett at the PAS, Catherine Hardman and Stuart Jeffrey of the ADS, and Ehren Milner at the AIP. Roger Thomas has been especially supportive throughout.

Prehistoric earthworks at Hazel Down. Photo copyright: Ian Cartwright.
The Origins of Wessex: Uncovering the Kingdom of the Gewisse

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The Anglo-Saxon kingdom of Wessex is popularly assumed to have originated around its later capital, Winchester. In fact, its origins lie in the Upper Thames Valley, with the emergence of a people referred to in early sources as the Gewisse (‘the trusty ones’); it is the Gewisse who, by the end of the seventh century, came to be known as the West Saxons. Yet the process by which Anglo-Saxon polities formed after the collapse of Roman authority in Britain in the early fifth century remains obscure. While written sources for this period are practically non-existent, archaeological evidence for the fifth to seventh centuries is constantly increasing and has enormous potential to illuminate the process by which supra-local communities formed, providing the basis of numerous small ‘kingdoms’ by the seventh century. This project focuses on one such kingdom, that of the West Saxons.

The aim of the project is to identify places in the landscape where people would regularly have come together along the Thames and its tributaries during the fifth to mid-eighth centuries and the relationship of these places to communication routes. Aerial photographic and other evidence is being used to examine the relationship of Anglo-Saxon sites – burials and settlements – to earlier trackways and monuments, particularly important since the names of some of the ‘founding fathers’ of the Gewisse signal Romano-British origins. Indeed one possibility being examined is that some of the late Romano-British elite survived by ‘becoming’ Saxon. The project is also using data from the Portable Antiquities Scheme and the Corpus of Early Medieval Coin Finds to establish the distribution of imported metalwork, high-status objects and coins in relation to routeways. Hitherto unsuspected concentrations of such objects have emerged, and these may indicate the location of previously unrecorded cemeteries, markets and high-status centres. Potential routeways and nodes in communication networks have been identified through the distribution of sites and artefacts, using GIS software. The role of inter-visibility in determining the placement of formal markets, early Christian sites, ‘princely’ settlements and cemeteries is also being considered, particularly in relation to rivers, roads, prehistoric and Roman monuments, and other landscape features, by using ‘banded’ viewsheds. Through the combination of finds distributions, aerial prospection and LiDAR data, the project is identifying new sites as well as providing a more detailed understanding of previously identified sites. The second phase of the pilot will involve new campaigns of fieldwork and survey.

The Origins of Wessex Pilot Project was funded by the John Fell Fund, Oxford University.

A metal-detector find in Oxfordshire led to the discovery in 2009 of the grave of a woman who died around the middle of the seventh century and was buried wearing this fine garnet-inlaid disc brooch. Its similarities to two others found in the Upper Thames Valley connect this new find to a ‘chain’ of high-status burials and settlements of the leaders of the Gewisse. Photo: I. Cartwright, Institute of Archaeology, Oxford.
This ‘banded viewshed’ shows how three high-status settlements of the Gewisse – at Dorchester, Long Wittenham and Sutton Courtenay – had distinct ‘zones’ of visibility and were all connected by a Roman trackway which was still in use in the seventh century.
The earliest dispersal of anatomically modern humans in Europe

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The extent to which Neanderthals and anatomically modern humans (AMH) overlapped in Eurasia is a key question in palaeoanthropology. Longer contemporaneity increases the chance for genetic and cultural exchange to have occurred between the two and tells us much about how the process of Neanderthal extinction might have played out. Accurate dating of the latest Neanderthals and earliest AMH is especially important, but has been difficult due to the serious technical challenge of applying radiocarbon towards its limit around 50–55,000 BP. Research in the Oxford Radiocarbon Accelerator Unit has focused on improving the dating of material from the Palaeolithic by developing improved methods of removing contamination from samples prior to dating. Two recent examples of this work show the importance of getting the dating right in the context of the Palaeolithic.

Kent’s Cavern, near Torquay in Devon, is one of the most important archaeological sites in Britain. Sediments within it contain material dating to the period when the earliest modern humans replaced the latest Neanderthals in Britain – between ~45–35,000 years ago. Recent work we have undertaken has produced an age for a tiny piece of human maxilla called KC4 that was excavated in the 1920s.

Radiocarbon dating was first attempted on the specimen in 1988, and an age of 30,900 ± 900 BP was obtained. Doubts were raised about the result many years later because trace animal collagen glue used to treat the bone was found on the specimen. A renewed attempt to date it failed, so new animal bone samples selected from above and below the maxilla find spot were dated instead, using the ORAU ultrafiltration method. This method removes contaminants more effectively than other less rigorous techniques and produces more reliable AMS dates. The results showed that the maxilla is more than 6000 years older than previously thought at ~41–44,000 years ago. The age estimate was generated using a Bayesian statistical model of the dating results. It puts the specimen into the period when the final Neanderthals were present in Europe along with the early Aurignacian, an industry associated with AMH. Uncertainties over the precise attribution of the specimen were addressed by exhaustive morphometric and CT-based scanning methods, and a comparison of the results against a dataset of AMH and Neanderthal teeth. This showed that in the majority of traits, the KC4
teeth had modern human, rather than Neanderthal, characteristics. We conclude that the specimen is an AMH, and it pre-dates all previously known AMH in north-western Europe, attesting to the rapid dispersal rate of our species across the continent at this time.

ORAU has also developed novel techniques for isolating chemically pure carbonates. One of us (KD) developed a means by which original aragonitic carbonate can be separated from calcite, the contaminating form of carbonate, using a heavy liquid density separation method. The method was applied to shell ornaments from Uluzzian levels at the Italian site of Grotta del Cavallo. This helped us to date two infant teeth discovered at the site in 1964. These had previously been classified as Neanderthal. New research, however, using microCT scanning and morphometric analysis, showed that these specimens are actually AMH. Our new chronometric model shows that the teeth must date to between 43–45,000 years ago, making them the earliest remains of anatomically modern people in Europe ever found. The results of the teeth reanalysis show that the Uluzzian levels in which they were found must have been the work of AMH. This is important because the Uluzzian industry has yielded personal ornaments, colourants and bone tools, items that were, up until our research, associated with Neanderthals in Italy.

References:
The nature and impact of Viking settlement in England has been a locus of debate for the past 50 years. In archaeology, one of the most important sources of information for Scandinavian England is portable metalwork. Over the last 15–20 years, hundreds of new discoveries have been made, largely as a result of metal-detecting. If properly studied, these recent finds have the potential to transform understanding of key aspects of Scandinavian society.

Archaeological examination of the Viking bullion economy, in which weighed silver and gold were used as a means of exchange, rather than coin, offers a palpable means of understanding Scandinavian settlement. The use of bullion distinguished the Scandinavians from the coin-using Anglo-Saxons in this period. This British Academy-funded project aims to collect and analyse evidence for Scandinavian bullion and bullion-related objects in England, including items such as ingots, foreign coin and weights. This material can provide new insights into fundamental questions such as: what were the sources of Viking wealth? How did the Vikings pay for goods and to what extent did they integrate into Anglo-Saxon society?

Past study of Viking bullion has been dominated by the evidence of silver hoards, found in England in large numbers from the early tenth century. While these approaches are valuable, material selected and deliberately deposited in hoards may not be typical of items used in daily exchange. Breaking from this traditional focus, this project uses an altogether different category of evidence: finds from settlements and single finds, discovered over the last two decades as a result of metal-detecting. As accidental losses, these represent the scale and use of bullion more accurately, providing novel insights into Viking economic practice.

Since beginning the project in October 2011, I have built up a database of some 300 finds of bullion or bullion-related material, all found by recent metal-detecting. This material reveals fascinating insights into Scandinavian economic practice. The high degree of fragmentation exhibited by the imported coin and ingots suggests that the new settlers used bullion to pay for very small transactions – equivalent to a couple of pounds in today’s money. Such a practice was not suggested by the hoards, which tend to exclude low-value pieces. The distribution of the single finds is also surprising, with many items coming from regions where coinage is also well documented. This raises questions as to why bullion continued to be used when coinage was readily available.

In addition to addressing these questions, future research will also investigate the sources of Scandinavian silver in the period: did the Vikings obtain silver from Anglo-Saxon, Continental or Scandinavian sources? The answer will, in turn, provide new insights into economic zones and relationships within Viking-Age Britain and Scandinavia.

The Bullion Economy of Viking England is a three-year project, funded by the British Academy.

Whereas the Scandinavian settlers used bullion as a means of exchange, the native Anglo-Saxons used coin. This silver ingot from West Yorkshire has a typical Scandinavian cigar shape and bears diagnostic test marks, suggesting its use in a Scandinavian-style bullion transaction.
Palaeoclimatic Information from Ostrich Eggshell

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Climate and environmental parameters provide the contextual information essential for understanding the nature of sites and the subsistence behaviour of its occupants. But extracting this information is very challenging in arid and semi-arid areas, and in particular the means to estimate aridity, precisely, are few. Ostriches are arid-adapted birds that obtain most of their water requirements from plants so the stable isotope composition of their eggshells can provide information about climate and vegetation eaten at the time of egg formation. Importantly, ostrich eggshell (OES) fragments survive well over long periods of time and are ubiquitous in many African archaeological and palaeontological sites. This is because they were frequently used for food, as decorative beads and as containers. They were also favoured by hyenas, who supplied them to their young in the dens.

The first step in understanding the isotopic composition of OES as a response to external conditions has been to study modern eggshells, as questions remain about exactly how moisture availability is archived, what sorts of plants are eaten by the birds, how much variability occurs, and how the timing of the egg-laying season affects the results. Keeping the source of moisture (from the south-east Atlantic) constant, we analysed eggshells from sites...
in a rainfall and humidity transect along the west coast of southern Africa, from the De Hoop Nature Reserve in the south, to the central Namib Desert. The results show a strong relationship between δ¹⁸O and mean annual precipitation, which can be related to the degree of evapotranspiration in plants (and hence humidity), while δ¹³C shows that ostriches made use of plants following all three photosynthetic pathways as available. This project began years ago with the help of the late Professor Nick Shackleton, and it has been continued with collaborator Dr Loïc Ségalen of the UPMC, Paris.

Now that we have a better handle on how best to interpret the isotopic composition, the next and current step is its application to sequences in the exceptional sites at Pinnacle Point. These sites, near Mossel Bay, South Africa, have been subjected to a battery of approaches to position the cultural record of early modern humans into a secure chronological, climatic and environmental setting. The SACP4 Project, led by Professor Curtis Marean of ASU, USA, with a large multidisciplinary team, is drawing to a conclusion (to be followed immediately by another NSF-funded initiative). The isotopic analysis of fauna, and ostrich eggshell, forms one of the components of this endeavour, and in the latter case it is being completed as part of a separately funded project, designed to explore closed-system amino-acid racemization dating of the eggshell and establish individually dated climate records using isotopes. The amino-acid racemization part of the project is based at York University, and the isotope component at the RLAHA.

Results obtained so far for an OIS 6 hyena den (PP30) and one of the longer Pinnacle Point archaeological sequences show (unsurprisingly) that OES during glacial conditions differed in both δ¹⁸O and δ¹³C compared to typical modern values, but not necessarily as expected. The glacial period flora, although more enriched in ¹³C, show little indication of change through time in contrast to stronger shifts in a nearby stalagmite record. On the other hand, the OES δ¹⁸O shifts are greater than those of the stalagmite, and suggest an aridification trend roughly equivalent to a halving of effective precipitation for the period 50–80 ka. Once we have completed isotope analyses for these two sites, we will move on to other PP sites that represent different periods and thus build up a longer sequence.

The SACP4 Project was funded by the NSF and others to Professor Curtis Marean, Arizona State University, and the Building a Better Egg timer Project by a NERC grant to Kirsty Penkman et al. (York University) and to Julia Lee-Thorp (Oxford).
Last year’s annual report introduced some aspects of the fieldwork that Charlie Arthur and I have been undertaking ahead of the construction of the Metolong Dam in the southern African kingdom of Lesotho. Although recent reports indicate that construction of the dam wall – and thus the eventual impoundment of the dam itself – are running behind schedule and may not now be completed until the southern summer of 2013/14, there is no doubt that the dam will, in the end, drown a key stretch of Lesotho’s Phuthiatsana River, rich in many different forms of archaeology.

The principal objective of excavations carried out from August to October 2011 was to learn more about Ntloana Tsoana, one of two large rock-shelters that will disappear below the Metolong reservoir. Earlier excavations demonstrated that this site preserves a series of Middle Stone Age stone tool assemblages of Howiesons Poort and post-Howiesons Poort affiliation, the oldest of which dates back to some 59,000 years ago. They also showed that, above these deposits of Marine Isotope Stage 3 date, an extensive sequence of occupation horizons dating to the Pleistocene/Holocene transition is preserved below a thick series of culturally sterile silts. What was not known before our re-excavation of the site began in 2009 was that at the base of these late Pleistocene/early Holocene layers are remains of several occupations associated with makers of the Robberg Industry. Distinguished by the systematic production and use of small stone bladelets struck from specialized bladelet cores, but otherwise almost wholly lacking in any formal elements, the Robberg dates to around 19–12,000 years ago, although there is a suspicion that in south-eastern southern Africa (perhaps including Lesotho) it may have persisted into the very beginning of the Holocene. The bladelets themselves seem, from microwear and residue studies undertaken elsewhere, to have been used in working many different materials, most likely as multiple inserts in hafted tools.

Robberg sites are relatively rare in southern Africa, often being separated from each other by several hundred kilometres, but in this case we can compare Ntloana Tsoana with Lyn Wadley’s excavations just across the Lesotho/South African border at Rose Cottage Cave. Moreover,
we know from excavations that I undertook some 25 km south-east of Ntloana Tsoana in 1988 and 1989 that the Robberg is also represented at the site of Tloule, another large western Lesotho rock-shelter. Excitingly, analysis of the stone tool assemblages that we recovered in 2010 from Ha Makotoko, just 2 km downstream from Ntloana Tsoana and also due to be flooded, hints strongly at the presence of the Robberg there as well. In other words, and drawing on insights from colleagues who are studying the fauna from our excavations as well as a number of palaeoenvironmental proxies, we may, for the first time, be able to approach the Robberg at a level of spatial resolution commensurate with that at which people actually used their local landscape.

The last 12 months have also seen us obtain the first set of radiocarbon dates from our excavations. Among other key results, they date the newly discovered Middle Stone Age (MSA) assemblage at Ha Makotoko to 40100 ± 230 BP (UGAMS-8988), probably broadly contemporary with the later MSA components at Ntloana Tsoana and definitely within a period for which relatively few observations are yet known elsewhere in the sub-continent. We plan to explore the dating of both sites through further dates in the near future, making use in part of the ORADS facility here in Oxford. In addition, Zenobia Jacobs of the University of Wollongong, Australia, was able to visit the Metolong area last year and took over 30 samples for single-grain Optically Stimulated Luminescence (OSL dating). This will provide a check on our radiocarbon dates and extends Zenobia’s previous work at Ntloana Tsoana (Jacobs et al. 2008), but it will also give us a sound chronology for the combination of aeolian and riverine processes responsible for the deposition of significant thicknesses of culturally sterile sediment on top of the early Holocene archaeologi- cal levels at both of our major sites. Identification of those processes and linking them into broader changes in the wider landscape is a key concern of another of our collaborators, Mike Morley of Oxford Brookes University, who also joined us in the field last year.

A third colleague who visited the Metolong area during the past year is Adelphine Bonneau of the University of Quebec at Montreal. Building on her success in dating Bushman rock paintings in South Africa (Bonneau et al. 2012), she was able to take samples from four of the rock art sites that will be drowned by the dam. As well as seeking material for radiocarbon dating, she is hoping to apply OSL dating as an independent check on the age of the paintings sampled and is also attempting to characterize and identify the kinds of pigments used. Preliminary results are promising and suggest that – at least for images painted in black – we may be able to obtain dates. If so, this will make a significant contribution to beginning to develop a sound chronology for southern African Bushman rock paintings, something still very much in its incipient stages but essential if we are to have any hope of unravelling possible changes in the art over time or of linking the art to the evidence recovered from excavation. More fieldwork on this theme, as on others, is scheduled for 2012.

Finally, I should point out that there is more to African archaeology in Oxford than Metolong as we also have a thriving graduate community. Of current doctoral students Victoria Waldock continues her work analysing rock engravings in the Libyan Sahara, while Lara Mallen is exploring the links between rock art, excavated data and oral history to the south-east of Metolong in the Maclear district of South Africa’s Eastern Cape Province. Elsewhere in South Africa, Mark McGranaghan has just completed a study of nineteenth-century Xam Bushmen – source of much of the ethnography used to interpret the art – and Jayson Orton is writing up results of his many excavations on the Holocene archaeology of Namaqualand. Further afield, Tim Forsman is researching the record left by hunter-gatherers who lived alongside farmers in Botswana’s Tuli Block, while two new projects have begun in Lesotho itself: Luiseach Nic Eoin is examining grindstones from the Metolong sites to identify the materials that were processed on them and Rachel King has begun a project to look at the archaeology of farming communities in south-western Lesotho and adjacent parts of South Africa.

References:

Archaeological research at Metolong has principally been funded by the World Bank and the Metolong Authority, although excavations in 2011 were funded by the Boise and John Fell Funds of the University of Oxford and a grant from the British Academy. Lesotho’s Department of Culture provides authorization for the project.
Technological Transfer in the Eastern Mediterranean during the Bronze Age

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The beginning of the second millennium is characterized in the eastern Mediterranean (Aegean world, Cyprus, Anatolia, Egypt, North and South Levant) by the emergence of the palatial system. This phenomenon was accompanied by the development of luxury craft productions and specialized craftsmanship. Among these productions, the stone vase industry was one of the most flourishing, mainly in Minoan Crete and in Egypt, from where numerous artefacts and techniques were exported and sometimes imitated (mainly the Egyptianizing production) throughout this area. The development of trade and contacts allowed the spread of ideas and objects, but also of artisans and their know-how. Different reactions to the introduction and selection of foreign techniques can be observed, which are deeply connected to political, diplomatic and cultural relationships between production centres.

To identify the techniques, a multidisciplinary approach was developed with the RLAHA in Oxford and an international collaboration, which associates chemical analysis (Cranfield University), tribology (LTDS of Lyon, France), and experimental reconstruction of ancient processes, as well as ethnographical studies of traditional workshops in India (ANR – CNRS, France) and Egypt, which have been planned in order to complete the research. Analysis of the traces of manufacture left on the archaeological objects is performed at different scales of observation (macroscopic to microscopic).

A group of stone vases was selected for this study mainly from museums and collections in the UK (Ashmolean, Petrie Museum, Levantine collection in UCL) and Greece (National and Cycladic Museum in Athens, Museum of Mycenae, Stratigraphical Museum at Knossos). Then, the recorded traces were compared to a database of traces derived from experimental reconstructions in order to identify the ancient processes. The reconstruction of ancient techniques in the field also yields information that can be used in the identification of the processes of transmission of the new techniques, as well as the organization of the production in workshops.

More recently, with the collaboration of the Khalili Research Centre (Oxford), this research has been enlarged to include a project on the reconstruction of lapidary techniques developed for the manufacture of Fatimid rock crystal vessels (Islamic period).

This multidisciplinary work constitutes the first step towards a reconstruction of the history of techniques, the evolution and the changes in the minds of human groups challenged by technological innovations and of their perception.

For further information, see:

This project is funded by a two-year postdoctoral Fyssen Foundation grant (France). We thank the museums and directors of excavations, and the archaeological authorities in Greece and the BSA for their permission to study the material stored in these institutions, as well as the researchers involved in this project in the UK, Greece and France.
**Out of Africa: Human Migrations into Arabia**

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The movement of our species out of Africa is one of the hottest topics in palaeoanthropology and human evolutionary studies. Mitochondrial DNA evidence has been used to suggest the dispersal of humans out of Africa, via the Horn of Africa into Arabia, and on to the rest of Eurasia. Human population movements across southern Asia are posited to have been rapid, employing a coastal route about 60,000 years ago. According to this account, as populations wandered along the coasts, they would have avoided the hyper-arid deserts of Arabia. These coastal dispersals would supposedly have been marked by ‘Upper Palaeolithic-like’ technologies, noted by blade and microblade tools. Recent archaeological research in the Arabian peninsula is challenging this traditional view.

Oxford, together with an international team of scientists, is engaged in an on-going collaborative project in the Kingdom of Saudi Arabia. Our project team is uncovering archaeological evidence relevant to addressing the timing and extent of human expansions out of Africa. Excavations have been performed along the shorelines of the Jubbah palaeolake, identifying the presence of well-preserved Middle Palaeolithic sites dating to a humid period, about 75,000 years ago. The lake would have been an attractive environment for humans, as freshwater resources were available, in addition to an abundant supply of raw material for stone tool manufacture. Our palaeoenvironmental studies demonstrate that the lake was surrounded by grasslands with some trees, thereby indicating that the region would have supported animals in this savanna-like setting.

Contrary to the view that populations utilized coastlines, our research indicates that foraging populations were using the abundant rivers and lakes to migrate across the Arabian peninsula. Our view is that modern humans got out of Africa much earlier than 60,000 years ago, the migration marked by Middle Palaeolithic toolkits distributed across the Arabian peninsula. One of the most fascinating, and unsolved, questions concerns what happened to these groups once the desert advanced and freshwater supplies dried up. Our future research will address whether large areas of Arabia were abandoned during dry periods and the degree to which groups were able to survive in isolated pockets with favourable habitats. Answers to these questions may be relevant for considering the impact of climate change in dryland settings today.

For further information, see:  
'Archaeology: Trailblazers across Arabia': [http://www.nature.com/nature/journal/v470/n7332/full/470050a.html](http://www.nature.com/nature/journal/v470/n7332/full/470050a.html)  

Archaeological research in the Kingdom of Saudi Arabia has been principally funded by grants from the National Geographic Society and the Leakey Foundation. We thank HRH Prince Sultan bin Salman, President of the General Commission for Tourism and Antiquities, and Professor Ali Ghabban, Vice President for Antiquities and Museums, for permission to carry out this study. We also acknowledge our close collaboration with Dr Abdullah Alsharekh, King Saud University, and researchers at universities in the UK, France and Australia.
Iron and Empire: Resolving the Role of Upland Populations in Angkorian State Formation

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The vast and iconic politico-religious complex at Angkor is probably the best known of all Southeast Asia’s archaeological sites. As such, great efforts have been expended to understand the long-term socio-cultural processes that led to the formation of the Angkorian and other regional state-level societies, but these have largely concentrated on the lowland groups that provided the necessary agrarian economic base and displayed precocious social ranking. The potential role of upland populations has been largely overlooked, and certainly not evidenced beyond the relatively poor time depth and dubious historical fidelity of recorded oral traditions. The great challenge to redressing this imbalance is the very weak archaeological signature we can expect of upland groups ethnographically recorded as e.g. living in stilted bamboo (or similar biodegradable) houses, practising swidden agriculture, and not using pottery. However, in Southeast Asia we benefit from a wealth of ethnohistoric data which indicate that economic specialization in metallurgy was largely the preserve of mineral- and fuel-rich upland groups. As metal production leaves substantial direct (e.g. furnaces and slag heaps) and indirect (e.g. palaeopollution and deforestation) evidence, metallurgical industrial heritage may be a privileged and durable means with which to investigate diachronic and multiscalar trends in upland occupation and economic activity.

Since 2009, collaborative research between Dr Mitch Hendrickson (University of Illinois-Chicago), Dr Stéphanie Leroy (French Centre d’Energie Atomique), and myself has focused on evaluating whether an upland ethnic minority group called the Kuay, noted for their expertise in iron mining, smelting and smithing by late nineteenth and early twentieth century francophone travellers around northern Cambodia, north-eastern Thailand and southern Laos, were responsible, fully or partly, for satisfying the Angkorian Khmer Empire’s (c. AD 800 to c.1450) enormous iron requirements for intensive agricultural production, vast building programmes and fervent militarism. Kuay metalworkers may have been a significant facilitating medium of Angkorian political ambitions, and it is by pursuing the long-term socio-cultural dynamics of regional iron technologies that we are beginning to address the Khmer/non-Khmer symbioses and tensions necessary for a more holistic understanding of the Angkorian Empire and the Kuay’s historical trajectory. The latter is especially significant given that Angkor is an overt and powerful symbol of the modern Cambodian state and the Kuay are almost totally absent from the textual evidence.

Third Eastern Gopura at Preah Khan of Kompong Svay. The buildings may have crushed slag foundations.
Excavations at five major loci have produced good macro evidence for technological continuity at iron production sites located in central Cambodian territories long associated with Kuay occupation, and initial radiocarbon dates have set the iron production sequence back to the eighth century AD, i.e. pre-Angkorian, and they could well extend earlier. In addition to field investigations, my materials science analyses of ore, furnace, tuyère and slag samples have provided ‘anthrochemical’ evidence for social relationships between iron-producing populations, whilst Dr Leroy’s advanced geochemical methodology has identified at least four different sources of iron for the tools and architectural crampons used in the construction of Angkorian temples. Furthermore, Dr Leroy has been extracting carbon from steely phases in the artefacts, which will enable the first ever radiometric dating of temple construction episodes to cross-check textual and art historical evaluations. The developing picture is thus one of the Angkorian state being dependent upon the upland populations encircling its primary agricultural territories for raw and processed materials.

Hendrickson’s ‘Industries of Angkor Project’ has been funded by the Australian Research Council and the National Geographic Society, my ‘Iron Kuay Project’ has been funded by the Wenner-Gren Foundation, and we have all been generously assisted by Cambodian colleagues and the Ecole française d’Extrême-Orient.
Calibrating the Radiocarbon Chronometer

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Radiocarbon is one of the main methods used to put archaeological information into a temporal framework. However, when we measure the radiocarbon in a sample all we can actually determine is the ratio of radioactive to stable carbon. In order to convert this measurement into a date we need to compare these measurements to other samples of known age. Over the last few decades laboratories world-wide have been working to find and measure suitable known-age material and we now have a ‘calibration curve’ based on tree rings extending back over the last twelve thousand years, just into the end of the last ice age. Before this we do have marine records but these are not ideal for assessing the age of terrestrial archaeological material.

The Oxford Radiocarbon Laboratory is involved in three major initiatives in relation to the calibration of radiocarbon dates:

1. The measurement of radiocarbon from a very unusual lake sediment in Japan, Lake Suigetsu, which has annual laminations throughout the last glacial and which retains a continuous record of radiocarbon extending over the full range of the technique.
2. Study of radiocarbon from Kauri trees in New Zealand, which provide a high-resolution snapshot of how radiocarbon varied on a decadal timescale in the very different climatic conditions of the last ice age.
3. Development of better statistical methods for the analysis of large sets of radiocarbon dates, through the program OxCal.

The Lake Suigetsu and Kauri Projects are complementary as the continuous record from Suigetsu provides the framework within which the high-resolution Kauri can be understood. Between them this research should give us, for the first time, a complete radiocarbon record for the atmosphere that can help us better understand the exact chronological meaning of radiocarbon dates from the Palaeolithic.

The results from this research are also giving us insights into the propagation of environmental changes during rapid climate shifts over this period. The Suigetsu radiocarbon dating program has now been completed and publication of the project will be completed over the next year.

When it comes to building archaeological chronologies, we need to use not only the environmental records of radiocarbon but also all the contextual information found in archaeological sites in the related material culture. This is increasingly being achieved through the application of Bayesian analysis, through programs such as ‘OxCal’, in studies ranging from the Middle/Upper Palaeolithic transition right up to the medieval period. More research is under way to develop these techniques further in support of projects such as RESET and Cemeteries and Sedentism in the Epipalaeolithic of North Africa.

The Suigetsu Project is a multi-disciplinary project led by Takeshi Nakagawa (Newcastle University) and funded by NERC. Richard Staff completed his D.Phil. at Oxford on this topic this year. For further information, see: http://www.suigetsu.org/

The Kauri Dating Project is led by Exeter with radiocarbon analyses carried out in Oxford by Linda Reynard (PDRA) and Richard Staff (PDRA).

The OxCal Project is an initiative of the Oxford Radiocarbon Accelerator Unit and statistical research has been conducted by D.Phil. student, Sharen Lee, supported by the NERC as part of the RESET Project: http://c14.arch.ox.ac.uk/reset/
China and Inner Asia, 1000–200 BC: Interactions that Changed China

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The project, funded by the Leverhulme Trust, explores changes stimulated in central China by contact with Inner Asia, namely Siberia and Central Asia. While central China along the Yellow River derived many significant technologies and materials, such as metallurgy, chariots, and gold, carnelian and faience, from their neighbours, the ways in which these were deployed were quite unlike those used in the adjacent areas. In October 2011, a post-doc, Dr Peter Hommel, and a graduate student, Beichen Chen, joined the team. Two more graduates will join in October 2012. Dr Hommel is working on the transmission of materials across Siberia and Mr Chen on the role of the Han River within China as a route of communication between the Yellow and Yangtze River basins.

Two areas of research in China are essential foundations for the project. The first of these is the excavation and study of sites in Xinjiang and Gansu provinces that have produced copper and bronze artefacts of dates earlier than the use of metal in central China around 1600 BC. While Xinjiang and Gansu are today integral parts of China, in the late third and second millennia, these areas were bridges between Siberia, with widespread use of copper and bronze weapons, and central China, where before the second millennium metals were hardly used at all. Thus the source of the stimulus to use copper and bronze is now identified as coming from the north and west. However, these stimuli do not explain the fascination with cast bronze vessels seen in China.

Study of both ceramic manufacture and culinary habits in East Asia is among the keys to understanding the unusual direction in bronze casting taken in China. China, Japan and eastern Siberia have revealed some of the world’s earliest ceramics, being in use from about 16,000 BC. Unlike other parts of East Asia, in China an outstanding ceramic production then evolved during the Neolithic period, in which boiling and steaming of grains, such as millet and rice, played a pivotal role. Highly elaborated ceramics imply that these were already deployed for some ritual use.

The project has therefore built upon these topics to argue that, while the alloying of copper and arsenic or copper and tin depended on an outside stimulus, preoccupation with vessels, rather than with weapons or ornaments (as in other regions), was due to the use of multiple ceramic vessels in elaborate shapes in Neolithic ritual practices that grew out of both China’s very early ceramic manufacture and a preoccupation with boiling and steaming foods, unlike the roasting practices of Western Asia. Papers on this topic were presented at the conference, Emergence of Bronze Age Societies – A Global Perspective, organized by Peking University and the Institute of Archaeology, University College London, at Baoji in Shaanxi province, November 2011 and at Peking University to celebrate the 90 years of archaeological work of the Faculty of Archaeology and Museology in April 2012.

For further information, see:

Bronze ritual vessel, Shang Dynasty, c.1200 BC. The elaborate surface detail and rectangular body are changes made by bronze casters to a vessel type that when first made in ceramics had a rounded body and three legs to hold the food or liquids it contained over a fire. The bronze is at Compton Verney, Warwickshire.
Beneath the waters of Aboukir Bay in Egypt lie the remains of a remarkably well-preserved maritime landscape. For the nautical archaeologist the finds from the port-city of Thonis-Heracleion are of particular significance. Preserved in the soft Nile silts of the harbour bottom the European Institute for Underwater Archaeology (IEASM), led by Franck Goddio, have discovered the remains of at least 64 ancient shipwrecks during survey and limited excavation work aimed at characterizing the topography of the site.

In September–October 2011, a team from the School of Archaeology’s Centre for Maritime Archaeology joined with the IEASM during their annual mission in Aboukir Bay to begin excavation of one of the ancient shipwrecks. Tentatively dated to between 785–412 cal BC, shipwreck 43 was originally discovered during explorations of the Central Harbour in 2007. It is part of a dense cluster of at least six other wrecks located in the northern sector of the port. The 2011 excavation concentrated on two areas, the bow and stern of the port side of the vessel. The aims were to investigate the wreck through limited stratigraphic excavation in order to understand the sequence of deposition, to assess the state of preservation of the shipwreck, and to document any remaining structural elements.

Preliminary observations suggest that shipwreck 43 has a distinctive form of ship construction that has not been fully documented elsewhere in the ancient Mediterranean. As the structural elements of the wreck were made from the locally available wood *Acacia tortilis/raddiana*, it is thought that shipwreck 43 was Egyptian in origin and thus we are probably dealing with a shipbuilding tradition that utilized local supplies of timber and developed in accordance with the realities of nautical life at the margins of the Nile Delta.

The preliminary results have inevitably left us with many more questions than answers and excavations will continue in 2012. While our first season has provided some insight into naval architecture of the vessel, a complete understanding of it, as well as clarifying how the ship came to be wrecked, awaits us in future seasons.

The mission was sponsored by grants from the John Fell Fund and the Craven Committee, and supported by the Hilti Foundation.
Excavations in the Peristyle Garden of the House of the Gladiators, Pompeii

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Most studies of gardens in Pompeii have not included excavation below the level of the surface sealed by the eruption of Vesuvius in AD 79. However, earlier work by the Oxford team in the garden of the House of the Greek Epigrams discovered that further evidence can be found in the garden soils themselves, including traces of the bedding out of plants. Burnt offerings to the lares (household gods) were found in small pits in the garden. Traces of early Bronze Age archaeology were also found in this garden, sealed beneath volcanic ash from an earlier eruption of Vesuvius. An opportunity arose to investigate these themes further at the House of the Gladiators (Pompeii V 5, 3) working in conjunction with Dr D. Esposito, who was analysing the structural sequence of the house.

A small team of students from the University of Oxford excavated in the peristyle garden for three seasons from 2008 to 2010. Once the undisturbed Roman soil had been reached, excavation proceeded using the Northern European technique of watering the soil so that any colour differences related to planting would be observed in the damp soil. Pumice-filled holes where the stumps of shrubs from AD 79 had decayed were excavated and plaster casts were made of their root systems. Deep trenches were also excavated into the underlying geological deposits.

The results suggested that the peristyle garden was laid out some time around 5 BC with a formal arrangement of trees and shrubs. Around AD 60 there was major rebuilding work and much of the planting was dug away by quarry pits. The garden was replanted with shrubs in flowerpots. Some survived until AD 79 so were represented by pumice-filled holes, others died and were replaced. The use of purpose-made flowerpots for some of the shrubs and the bedding out of plants grown in soil which was not local to the garden suggested that a thriving nursery trade served Pompeii. The only burnt offering was associated with a Hellenistic house buried by the garden.

The earliest deposit reached below the garden was yellow tephra which probably belonged to the Mercato eruption of Vesuvius in the Mesolithic. Above this was a colluvial accumulation of soil 0.7 m thick. The chronology of the pottery from the soil suggested that there was

Topsoil removal in the peristyle garden of the House of the Gladiators.
nearby settlement from the middle and late Neolithic, throughout the Bronze Age, perhaps even into the Iron Age. This soil was sealed by grey volcanic ash which represented the ground flow/surge deposit of a major eruption, presumably one of the late AP (Ante Plinian) eruptions of Vesuvius. These eruptions are not otherwise closely dated and if the ash is indeed Iron Age, this has major implications for the origin of the town of Pompeii. Archaic and Hellenistic remains were present above the grey ash.

La Soprintendenza archeologica di Napoli e Pompei granted permission to excavate. The project was partly funded by the British Academy.
The passage tombs of the Brú na Bóinne in Ireland are among the most iconic sites in Neolithic Europe. The large mound at Knowth is one of the three monumental constructions in the valley, alongside Newgrange and Dowth. Knowth is unique, however, in that its central mound is surrounded by a group of 20 smaller mounds, forming a veritable passage tomb cemetery. While these monuments have long been known to date roughly to the Middle Neolithic (c.3500–3000 BC), the available radiocarbon dates suffer from a number of problems (e.g. deriving from palaeosols underlying the monuments, and/or charcoal subject to possible 'old wood' effects). Moreover, the chronology has been too crude to address more detailed questions, such as the sequence of construction, and how long the large mounds in particular remained in use as burial places.

With this in mind, and in collaboration with the excavator of Knowth, Professor George Eogan, and a team of Irish and UK archaeologists, a thorough dating programme was initiated. In total 60 new AMS 14C determinations were obtained from the complex, all directly on human bone, both unburnt and cremated. While the majority of samples came from the elaborate eastern passage tomb of the main mound, efforts were made to include as many of the smaller satellite tombs as possible.

One serious problem we faced is that the period in question falls within a problematic part of the calibration curve, in which it is difficult to distinguish dates between about 3400 and 3000 BC. To overcome this, we used the Bayesian modelling capabilities of the OxCal program developed by Chris Ramsey of the RLAHA (also a project member). The results indicate that both the large and the small mounds were probably used for only one to two centuries, in the period 3160–2920 BC. There are only slight hints that some of the smaller mounds may have preceded the main mound (this sequence is seen more clearly archaeologically, but it lacks any chronological control). What all of this suggests is an explosion of tomb-building and use in Brú na Bóinne at the close of the fourth millennium BC. Interestingly, this period coincides with the introduction of a new form of pottery into Ireland, Grooved Ware, originating in Orkney. Grooved Ware is found at Knowth, but only in very limited quantities in its earliest forms. There are other connections between Ireland and Orkney, such as the very concept...
of passage tombs themselves, though this is part of a wider phenomenon spread along the Atlantic façade. Yet the megalithic building traditions – court tombs, portal tombs, simple passage tombs – of the Irish Early Neolithic had fallen out of use well before 3200 BC. Are we seeing in the Brú na Bóinne a reaction to new ideas – and people? – from abroad, drawing on but adapting earlier traditions of monument building?

The results of the dating project will appear as a chapter in the forthcoming volume on the main mound, Knowth 1.


For further reading:

'Dating Knowth' was made possible through funding from NERC’s ORADS programme, the Heritage Council of Ireland, the Royal Irish Academy and the 14CHRONO laboratory of Queen’s University Belfast.
There are many records of past climate. These marine, lake and ice cores show that the Earth has experienced large and abrupt changes in climate in the past. However, our understanding of the drivers of these changes and how these are propagated across the globe is not clear. In order to further our understanding we need to correlate precisely these palaeoclimate records so we can assess leads and lags. The deposits of large explosive eruptions are dispersed over thousands of kilometres forming unique markers and therefore ideal for synchronizing these archives. Our research group is involved in many projects to identify and characterize these volcanic ash layers in order to integrate archaeological and palaeoenvironmental records.

One of our current projects involves the high-resolution SG06 core from Lake Suigetsu, Japan that spans the last 150 kyr. This continuous record contains terrestrial macrofossils, diatoms and pollen, which make it one of the most important terrestrial palaeoclimatic records of the Late Pleistocene. SG06 also contains numerous tephra layers, including those that are only cryptically preserved and identified using density separation techniques. Detailed geochemistry is being carried out on the distal volcanic deposits preserved in SG06, and of some of the largest eruptions from Japan. The composition of the glass sherd allows us to characterize the deposits, effectively providing a fingerprint, to correlate to other distal layers and a particular volcano and eruption. The eruptions are often dated by radiometric methods, including radiocarbon and \(^{40}\text{Ar}/^{39}\text{Ar}\) techniques. \(^{40}\text{Ar}/^{39}\text{Ar}\) eruption ages could potentially provide chronology for the portion of the SG06 core that extends past the radiocarbon limit. Our research has shown that it is possible to obtain precise and accurate \(^{40}\text{Ar}/^{39}\text{Ar}\) ages on deposits as young as 10 ka, but large crystals are required (few mm in length). The dense and large crystals are only preserved in the proximal volcanic deposits; thus distal tephra need to be correlated using the glass chemistry. We are establishing which eruptions are recorded in SG06 and aim to date these events to constrain the chronology. The deposits of large numbers of explosive eruptions found in SG06 are also found in marine cores around Japan and beyond; identifying and dating the eruptions allow these records to be synchronized to understand further the climate system.

For further information on tephrochronology projects, see the departmental webpage.
Publications:
The Suigetsu tephra and Ar-Ar research is funded by the John Fell Fund from Oxford University Press and Oxford University.
How well could pre-industrial economies do? The nature, scale, structure and performance of ancient economies is one of the liveliest areas of debate in ancient history. The Oxford Roman Economy Project, co-directed by Alan Bowman and Andrew Wilson, combines archaeological and ancient documentary sources to quantify elements of the Roman economy, especially in the period 100 BC–AD 350 which produced the greatest quantity of monuments and works of art still visible today. The project has been collecting a large amount of archaeological and documentary data on Roman settlement, agriculture, trade, mining and coinage, in an attempt to analyse historical patterns from the vast mass of information accumulated especially over the last few decades of excavations across the Roman world.

The results are disseminated through annual conferences (on urbanization and demography; agriculture; trade; mining and coinage; and most recently, the economics of Roman art); and a range of other workshops and colloquia, whose proceedings are published in the new OUP series, Oxford Studies on the Roman Economy. There is also a project website, with working papers and bibliographies, and online databases.

The emerging picture suggests that the Roman economy experienced per capita growth apparently in parallel with aggregate growth as the population grew between the end of the civil wars (31 BC) and the Antonine Plague (smallpox?) of the AD 160s. A key focus of research is on what might be the explanation for how, for a century and a half, the Roman economy defied Malthusian expectations, which predict that – in pre-industrial societies lacking fossil fuels – as population grows per capita income should decline as marginal returns decrease, and vice versa. The answers lie in a combination of technological change, institutional change as the Mediterranean became a Roman lake, a process of Smithian growth in which the archaeological record shows us the interplay of urbanization, increased long-distance trade, and the division of labour. Arguably, after the collapse of the western Roman empire in the fifth century, Roman levels of urbanization, trade, and prosperity on several indices were not matched again until, variously, the late medieval or early modern periods.

For further information, see the OXREP website: http://oxrep.classics.ox.ac.uk/

and


The Oxford Roman Economy Project has been funded by grants from the AHRC and the European Science Foundation, and since 2009, by the generosity of Baron Lorne Thyssen.
For me, Oxford has always represented the pinnacle of education, and particularly with my being from the Czech Republic, its image and reputation seemed even more distant and eminent. Inspired by my parents who always taught me the value of education, going to Oxford is something that I have wanted to achieve since the age of 8.

Choosing the subject of study was not easy, as my interests have always been very broad, from literature to history, from philosophy to psychology. I was, however, certain that whatever it was I chose to study, it would be something from the humanities. This even further deepened my desire to study at Oxford, which is known for its academic prowess particularly in the social sciences and humanities.

When researching possible courses, the Archaeology and Anthropology course caught my eye immediately. It was the fascinating interdisciplinary approach that gripped me; the combination of almost a psychological approach from the Anthropological aspect as well as the rigorous, scientific and historical approach from the Archaeological perspective. However, the longer one does the course, the apparent divide between the two subjects fades, until, after a few essays, you realize that one really cannot be studied without the other. This is what I enjoy most about this course; the endless possibilities of forming arguments and constructing theoretical approaches, as well as rigorously examining concrete examples and making links between seemingly unlinkable phenomena. The vast range of material studied, as well as the tutors' encouragement not to 'be afraid' and instead argue, think unconventionally and dispute, is exactly what I was looking for in this university course.

However, finally deciding to apply for Archaeology and Anthropology was not an easy step; particularly in the current uncertain economic climate, my family, while being extremely supportive, was afraid that this course is not something that will secure me a bright financial future. Again, however, I was taken by surprise at how 'useful' the course is. While most of the general public see it as Indiana-Jones Studies or putting broken pots back together (and usually do not even know what Anthropology is), it is the set of skills that one learns that is invaluable for later employment. Such skills are, for example, not only efficient and convincing essay writing, thinking of rigorous arguments on the spot, and being able to argue efficiently with relevant use of examples, but also having good analytical skills and handling problems on which we have very little background information. Moreover, the sheer quantity and range of material covered gives us the ability to quickly digest and process new information and also gives us a well-rounded general as well as academic knowledge, overlapping many disciplines. All of these skills are relevant to virtually any job. In this respect, although many people do not realize it, Archaeology and Anthropology opens many doors; and I am grateful to be one of those selected few who are able to study it in one of the best institutions in the world.
originally, I wanted to take Classics at university, as Latin was my favourite subject at school. However, I changed my mind when I studied Ted Hughes as part of my English A-Level and did some background research on him. I discovered that he studied Archaeology and Anthropology at university (admittedly he was at ‘the other place in the fens’) and I wasn’t sure what that was, so looked it up. I was fascinated by what I found out, and realized that I didn’t just have to study the Greeks and Romans, but I could learn about every group of people of every size in every part of the world at every point in human history! What could be more exciting than that? Immediately I decided that this was the course for me – and probably the course for everyone if only they knew about it sooner. The next step, of course, was to try and work out where I wanted to study it.

The main reason I wanted to study Archaeology and Anthropology here in Oxford was due to the course structure. I had also looked at ‘the other place’ mentioned above, but at the time I was applying the way the degree there was structured meant that at the end of your first year you had to choose only one of the three parts of the course (Archaeology, Social Anthropology and Biological Anthropology) to study for the rest of your degree. I spoke to some of the first-year undergraduates there, and they hadn’t got long left to decide, and still didn’t know which they preferred. I decided that wasn’t a decision I wanted to be faced with – as I’ve said, most of the appeal of the course for me came from its breadth, and I wanted to keep that for as long as possible. I decided that I wanted to come to Oxford more than anywhere else.

Over the last two years I have realized just how lucky I am to have been one of the selected applicants, as these have been the best two years of my life, which is in large part down to the subject I study. At Oxford, you can’t get away from your subject – there’s always more work you could be doing! – and so I think here more than anywhere else it is really important to love what you study. It’s a great feeling knowing that I’m not just going to learn something new at each lecture, but something both new and really interesting, put across more often than not by one of the academics who have contributed to leading research in the area. Reading for essays isn’t a chore like it is for some of my friends in other subjects. If I’ve enjoyed writing every essay, I’ve enjoyed having every tutorial even more. I can’t imagine being happier taking any course other than Archaeology and Anthropology at Oxford. Long may it continue.
Maira Seeley

I became interested in archaeology as a more hands-on approach to the past. I had originally thought to study either history or anthropology, but I preferred archaeology’s use of physical evidence to interpret the past to history’s more document-based methods. Archaeology was also attractive because of its potential to address a broader social past than that usually reflected in documentary sources. I was particularly interested in the daily lives of non-elites and ‘social history’, which is a subject that archaeology seems uniquely suited to address. Although biases such as the effects of taphonomy exist in the archaeological record, they usually have a similar influence on all social groups’ material records. While this does not mean that the same amount of archaeological information is available for all social groups, it can result in a more balanced image of a given society than we can gain from a document-based approach. Before I applied to Oxford, I had volunteered on several archaeological excavations and knew that I enjoyed the fieldwork aspects of the discipline. I like being outdoors and working with my hands, as well as travelling, which made me better suited to archaeology than to an exclusively library-based course.

Oxford was attractive because of the Arch and Anth course syllabus, its location, and Oxford’s reputation. My decision to apply was largely based on the syllabus’ content: I liked the balance between the study of contemporary societies and the archaeological record. I am strongly interested in the contemporary world but felt that a thorough grasp of the past was necessary for any understanding of the present, so the combination of archaeology and anthropology was ideal. The decision was mostly academic, but I also was attracted to the chance of studying abroad. It seemed logical to study anthropology in a foreign country so that I would be forced to engage in participant observation and could put anthropological techniques into daily practice. To an American, Britain is also a much more interesting place to study archaeology than the USA. I had heard of the Oxford tutorial system’s reputation for encouraging critical thinking and providing a challenge, and I wanted to improve my reasoning skills. The fact that Oxford is a very liveable city helped too – I didn’t want to live in a huge urban area and had enjoyed Oxford on previous visits.
Nick Barton

Amy Bogaard

Nicole Boivin

Fiona Brock

Peter Bray

Lisa Bendall


48 REPORT OF THE OXFORD SCHOOL OF ARCHAEOLOGY 2011–2012
Anwen Cooper  
2012 (with Yarrow, T.): ‘Permanently travelling from place to place’: oral histories of the 1960s digging circuit in Britain. *International Journal of Historical Archaeology* 16(2), 300–18.

Barry Cunliffe  

Michael Dee  


Janet DeLaine  

Peter Ditchfield  


Katerina Douka  


Ceiridwen J. Edwards  


Irene Good
2011: Up from the ice: a look at dress in the Iron Age Altai (a review article of Barkova and Polos’mak’s *Costume and Textiles of the Pazyryk Alps*). Silkroad Newsletter 9, 146–53.

Chris Gosden

Chris Green

Helena Hamerow

Michael Haslam

Robert Hedges

Tom Higham
Linda Hulin


Zena Kamash


Jane Kershaw


Christine Lane


Julia Lee Thorp


Gary Lock


Peter Mitchell


Philipp Niewöhner


Michael Petraglia


Thomas Pryce


Christopher Ramsey


Jessica Rawson


Damian Robinson

Mark Robinson


Rick Schulting


J.-L. Schwenninger


Letty ten Harkel


Andrew Wilson


Major Grants 2011–2012

Nick Barton
*Earliest symbolism and cemeteries in prehistoric North Africa – Research Fellowship* (Leverhulme Trust)

Chris Gosden
*EngLAID – Landscape and Identities: The case of the English landscape 1500 BC–AD 1086* (European Research Council)

Michael Haslam
*PRIMARCH* (European Research Council)

Thomas Higham
*A forensic investigation of bones found in the reliquary of the Monastery of John the Forerunner and the Baptist, on St Ivans Island, Bulgaria* (National Geographic Society)

Thomas Higham
*Seeing genes in space and time – Woolly mammoth* (Natural Environment Research Council)

Jane Kershaw
*The bullion economy of Viking England – Postdoctoral Fellowship* (British Academy)

Christine Lane
*Tephra records of east African changing environments* (Leverhulme Trust)

Julia Lee-Thorp
*Evaluating hunter-gatherer subsistence strategies in Late-Glacial central Italy* (Leverhulme Trust)

Julia Lee-Thorp
*Ranging behaviour of Equus and Cervus* (British Academy)

Julia Lee-Thorp
*Dietary ecology of cross-river gorillas* (Leakey Foundation)

Gary Lock
*An atlas of hillforts in Britain and Ireland* (with Edinburgh University) (Arts and Humanities Research Council)

Peter Mitchell
*At the transition: Resolving human/climate relationships across the Pleistocene/Holocene boundary in southern Africa* (Leverhulme Trust)

Michael Petraglia
*Hominin dispersals and Palaeolithic archaeology at the Jubbah Palaeolake, Saudi Arabia* (Leakey Foundation)

Michael Petraglia
*PALAEODESERTS: Climate change and hominin evolution in the Arabian Desert* (European Research Council)

Mark Pollard
*Chemical structure and new behaviour: A new model for prehistoric metallurgy* (Leverhulme Trust)

Mark Pollard
*Rewriting the chronology of the Neolithic to Bronze Age in Iran* (British Academy)

Mark Pollard
*Mass migration and apartheid in Anglo-Saxon Britain? An ancient DNA re-evaluation* (Leverhulme Trust)

Mark Pollard
*Transition to ironworking in ancient Cholcis* (National Geographic Society)

Oliver Pryce
*The hunt for ancient metalworkers and the prehistory of the sub-Himalayan Silk Road in Nagaland, northeast India* (National Geographic Society)

Jessica Rawson
*China and Inner Asia (c.1000–200 BC): Interactions that changed early China* (Leverhulme Trust)
## Lectures

### Oxford Roman Economy Project Special Lecture

- **8 May**
  - Jean-Pierre Brun (Paris)
  - *Roman water-mills in Tres Galliae and in Germania Superior*

### School of Archaeology Meyerstein Lecture 2012

- **24 May**
  - Tony Wilkinson (Durham)
  - *Water supply and hydraulic landscapes in the Ancient Near East: an archaeological perspective*

### Other Special Lecture

- **6 June**
  - Mark Robinson
  - *Sacrifices and offerings in the peristyle gardens of Pompeii*

## Seminars

### African Archaeology Seminar

- **29 November**
  - Mark McGranaghan
  - *Foragers on the frontiers: /Xam hunter-gatherers in transition in the nineteenth century Cape Colony*

- **24 January**
  - Charles Arthur
  - *Archaeologists and dam projects in Africa: whose side are we on?*

- **7 February**
  - Tim Forrsmann
  - *Gathering dust: a look at foragers on the Mapungubwe landscape and a preliminary fieldwork report*

- **24 February**
  - Peter Mitchell
  - *Hunter-gatherer archaeology in Southern Africa: an embarrassment of riches?*

### Ancient Architecture Discussion Group

- **3 February**
  - Tiffany Chezum
  - *Funding of traditional temple construction in Ptolemaic and Roman Egypt*

- **10 February**
  - Alejandra Alberue
  - *An engineer’s perspective on the Basilica of Maxentius in the Roman Forum*

- **17 February**
  - Lilly Withycombe-Taperell (Royal Holloway)
  - *The Temple of Jupiter Tonans on the Capitoline hill in Augustan Rome: location and reconstruction*

- **24 February**
  - Chen Li
  - *Origins of Chinese Han Dynasty (206 BC–AD 220) stone chamber tombs*

- **2 March**
  - Javier Martinez
  - *Visigothic public architecture*

- **9 March**
  - Jen Thum
  - *A painted Old Testament textile from Late Antique Egypt and its possible links to the program in the synagogue at Dura Europos*

### Ancient Maritime Worlds

- **25 October**
  - Brian Fahy
  - *Cricket run or home run? Correlations between emporia and non-emporia based trade from the wreck of the Lena Shoal*

- **8 November**
  - Damian Robinson
  - *Shipwreck 43: a 5th century BC vessel from the port of Heracleion, Egypt*

- **22 November**
  - Ania Kotarba-Morley
  - *Maritime trade in the Arabian Sea – ocean of questions*

- **17 January**
  - Robert Barnes
  - *Maritime background to Eastern Indonesian population and history*

- **24 January**
  - Cyprian Broodbank (UCL)
  - *Before ‘corruption’: the making of the Middle Sea* (jointly with Barbarian Archaeology)

- **31 January**
  - Giles Richardson
  - *Extraordinary vessels: moving the obelisks of antiquity*

- **6 March**
  - Mark Horton (Bristol University)
  - *Ancient geographies and modern archaeology: understanding East Africa 2000 years ago* (jointly with African Archaeology Seminar)

- **14 February**
  - Greg Votruba
  - *Anchors outside of the Mediterranean (until c.1500 CE)* (jointly with Barbarian Archaeology)
**LECTURES AND SEMINARS**

**Asian Archaeology, Art and Culture Seminar Series**

- 2 November Dr Clare Harris
  *Locating Tibetan art: the ethics and aesthetics of the Youngusband Mission to Tibet 1903–4*

- 16 November Dr Wang Tao (SOAS)
  *Xia Nai and his London years: new evidence from his diary*

- 23 November Dr Nicole Coolidge Rousmaniere (Sainsbury Institute)
  *China for Japan, Chinese ceramics in medieval Japan and the formation of the Japanese porcelain industry*

- 29 November Professor Hirofumi Kato (Centre for Ainu and Indigenous Studies, Hokkaido University, Japan)
  *New excavations on Rebun Island – part of the new Baikal-Hokkaido Archaeological Project*

- 15 February Professor Daniel Waugh (University of Washington)
  *Mongolia’s archaeological heritage: old and new approaches to understanding ‘nomadic’ empires*

- 29 February Dr Margaret Sax (British Museum)
  *The evolution of the technology of jade carving in China*

- 14 March Professor Mark Hudson (University of Western Kyushu, Japan)
  *The Ainu and hunter-gatherer studies*

- 2 May Rudiger Krause (Goethe-University)
  *The Sintashta-culture and the metallurgy of the Eurasian steppe*

- 23 May Michael Sullivan
  *Chinese export ceramics in Southeast Asia and the Philippines: how it looked fifty years ago*

- 30 May Akira Matsuda (UEA)
  *Burial mounds and sense of place in Japan*

**Barbarian Prehistory Seminar Series**

- 15 November Thomas Kiely (British Museum)
  *Archaeology, politics and commerce in late 19th century BC or ‘How the Maroni Crater got to Oxford’*

- 28 February Dr Paul J. Lane (University of York)
  *Iron Age imageries and barbarian encounters: European prehistory’s African past*
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<td>Vulnerable island vs. resilient islanders: comparative archaeological narratives from the Pacific and Caribbean</td>
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<td>13 June</td>
<td>Carrie Wright</td>
<td>Calcium isotope analysis in archaeological science: working toward a new approach for detecting milk consumption in mammals</td>
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<td>Introduction to teaching – Fiona Bradshaw</td>
<td>How to find teaching, and how to lead a tutorial</td>
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<td>11 November</td>
<td>Kathryn Reusch</td>
<td>Human remains</td>
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<td>Erica Rowan</td>
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<td>Human bones</td>
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<td>From burials to settlements. A computer simulation of early medieval population numbers</td>
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<td>Elizabeth Brophy</td>
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<td>Philippa Puzey-Broomhead</td>
<td>Desired landscapes and disappointing realities: Black Loyalist land petitions and land grants in late eighteenth century New Brunswick</td>
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<td>Fieldwork methodology – an introduction on how to dig and set up a fieldwork project</td>
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<td>The mid Upper Palaeolithic of Russia and Ukraine in its European context</td>
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<td>Marlena Whiting</td>
<td>Accessing the Mesopotamian frontier in Late Antiquity: routes and logistics</td>
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<td>6 June</td>
<td>Chelsea Budd</td>
<td>Early prehistory in the Dneiper Basin of the Ukraine: diet, dating, and reservoir effects</td>
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<td>Chrysanthi Gallou (Nottingham)</td>
<td>Mycenaean chamber tombs at Epidaurus Limera in south-eastern Laconia</td>
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<td>Debbie Challis (Petrie Museum)</td>
<td>Defining ‘Greek’ at the Petrie Museum of Egyptian Archaeology</td>
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<tr>
<td>31 October</td>
<td>Letty ten Harkel</td>
<td>Material culture and urbanisation: the case of Viking-Age Lincoln</td>
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<tr>
<td>21 November</td>
<td>Ivo Stefan (Charles University)</td>
<td>Great Moravia as a socio-economic system. The emergence and collapse of an early medieval polity in Central Europe</td>
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<tr>
<td>23 January</td>
<td>Maureen Mellor</td>
<td>The archaeology of stuff: scorched interiors from mid-Saxon to Late Medieval</td>
</tr>
<tr>
<td>6 February</td>
<td>Eleanor Standley</td>
<td>Dress accessories and their role in everyday life in two regions of Britain, c.AD 1300–1700</td>
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<tr>
<td>20 February</td>
<td>Chris Fern</td>
<td>The Anglo-Saxon cemetery at Tranmere House (Sutton Hoo)</td>
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<tr>
<td>27 February</td>
<td>Hajnalka Herold</td>
<td>Between the Carolingian West and the Byzantine East: fortified elite settlements of the 9th and 10th centuries AD in Central Europe</td>
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<tr>
<td>5 March</td>
<td>Isaac Sastre-de Diego</td>
<td>Early Spanish churches through their liturgical sculpture</td>
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<td><strong>Oxford University Archaeological Society</strong></td>
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<tr>
<td>24 October</td>
<td>Dr Clive Waddington (Archaeological Research Services)</td>
<td>Fin Cop: a hillfort at war</td>
</tr>
<tr>
<td>7 November</td>
<td>Dr Chris Ferguson</td>
<td>Landscapes of life and religion in Anglo-Saxon Northumbria</td>
</tr>
<tr>
<td>23 November</td>
<td>Dr Cameron Petrie (University of Cambridge)</td>
<td>Land, water and settlement: approaching urbanisation in north-west India from the ground up</td>
</tr>
<tr>
<td>28 November</td>
<td>Dr Gill Hey (Oxford Archaeology)</td>
<td>New light on ancient (prehistoric) Dorchester-on-Thames</td>
</tr>
<tr>
<td>23 January</td>
<td>Dr Eleanor Standley</td>
<td>Trinkets and charms: the use and meaning of dress accessories from two British regions, c.1300–1700 AD</td>
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<tr>
<td>30 January</td>
<td>Liam McNamara</td>
<td>The redeveloped Egyptian Galleries at the Ashmolean Museum</td>
</tr>
<tr>
<td>6 February</td>
<td>Dr Jane Anderson (British Museum)</td>
<td>Fresh from the field: recent archaeological discoveries in the Berber-Abidiya region of Sudan</td>
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<tr>
<td>13 February</td>
<td>Dr Gabor Thomas (University of Reading)</td>
<td>Excavations at Lyminge and Bishopstone, Kent</td>
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<tr>
<td>20 February</td>
<td>Dr Tim Williams (Institute of Archaeology, UCL)</td>
<td>The Silk Road and excavations at Merv, Turkmenistan</td>
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<tr>
<td>27 February</td>
<td>Dr Sally Crawford and Dr Katharina Ulmschneider</td>
<td>Refugees, Nazis and archaeology: a war-time archive from the Institute of Archaeology, Oxford</td>
</tr>
<tr>
<td>30 April</td>
<td>Jack Carlson</td>
<td>Imperial power and the Imperial tombs of Rome and Qin-Han Chin</td>
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<tr>
<td>14 May</td>
<td>Paul Collins</td>
<td>Oxford in ancient Mesopotamia: the excavations at Kish</td>
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<tr>
<td>21 May</td>
<td>Tara-Jane Sutcliffe (English Heritage)</td>
<td>Mapping Millennia: The North York Moors National Park Mapping Programme</td>
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<tr>
<td>28 May</td>
<td>Matt Edgeworth (Leicester)</td>
<td>The archaeology of rivers</td>
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<td><strong>Palaeolithic and Quaternary Seminar</strong></td>
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<tr>
<td>13 October</td>
<td>Michael Haslam</td>
<td>Humans, apes and monkeys: reuniting the primate family through archaeology</td>
</tr>
<tr>
<td>20 October</td>
<td>Brian Stewart (University of Cambridge)</td>
<td>Did African moderns master ‘hard habitats’ before leaving the continent? A perspective from the South</td>
</tr>
<tr>
<td>27 October</td>
<td>Huw Groucutt</td>
<td>The prehistory of the Arabian Peninsula: deserts, dispersals and demography</td>
</tr>
<tr>
<td>3 November</td>
<td>Penny Spikins (University of York)</td>
<td>I’ll get by with a little help from my friends: moral emotions and the Middle–Upper Palaeolithic transition</td>
</tr>
<tr>
<td>10 November</td>
<td>Andrew Garrard (UCL)</td>
<td>Epipalaeolithic and Neolithic communities at the steppe and forest margins of the Levantine corridor</td>
</tr>
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<tr>
<td>24 November</td>
<td>Mark Thomas (UCL)</td>
<td>Modelling the spread of Aurignacian material culture: were the first modern humans in Europe ethno-linguistically structured?</td>
</tr>
<tr>
<td>1 December</td>
<td>Fernando Sanchez (Rovira i Virgili University)</td>
<td>Geospatial models for the analysis of land-use patterns among Pleistocene hominid communities: the case of the Sierra de Atapuerca (Burgos, Spain)</td>
</tr>
<tr>
<td>19 January</td>
<td>Peter Mitchell</td>
<td>The drought that wasn’t: developing the archaeology of Marine Isotope Stage 3 in Southern Africa</td>
</tr>
<tr>
<td>26 January</td>
<td>Cassian Bramham Law</td>
<td>To boldly go: tracing the final Palaeolithic re-occupation of the North European Plain</td>
</tr>
<tr>
<td>2 February</td>
<td>Geoff Smith (UCL)</td>
<td>New data from old bones: a new project investigating the Neanderthal site of La Cotte de St Brelade, Jersey</td>
</tr>
<tr>
<td>9 February</td>
<td>Robyn Inglis (University of York)</td>
<td>80,000 years of dust? Site formation and environmental change during the MSA and LSA at the Haoua Fteah, Libya</td>
</tr>
<tr>
<td>16 February</td>
<td>Ryan Rabett (University of Cambridge)</td>
<td>Late Pleistocene to Mid-Holocene settlement of sub-coastal uplands in northern Vietnam</td>
</tr>
<tr>
<td>23 February</td>
<td>Philip Nigst (University of Cambridge)</td>
<td>The Aurignacian of Willendorf II</td>
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<tr>
<td>1 March</td>
<td>Chris Stringer (Natural History Museum)</td>
<td>Some current issues in modern human origins research</td>
</tr>
<tr>
<td>8 March</td>
<td>Iza Romanowska (University of Southampton)</td>
<td>Looking for the Lower Palaeolithic of Central and Eastern Europe: history of research, agent based modelling of the dispersal, and the lees hypothesis</td>
</tr>
<tr>
<td>26 April</td>
<td>James Cole (University of Southampton)</td>
<td>Hominin cognitive and behavioural complexity in the Pleistocene: a new assessment through identity, intentionality and visual display</td>
</tr>
<tr>
<td>3 May</td>
<td>Fiona Coward (Royal Holloway)</td>
<td>How stuff made us: material engagement in the evolution of human social networks</td>
</tr>
<tr>
<td>10 May</td>
<td>Michael Petraglia</td>
<td>The Palaeodeserts Project: climate change and human occupation in the Arabian Peninsula</td>
</tr>
<tr>
<td>17 May</td>
<td>C. Reid Ferring (University of North Texas)</td>
<td>Lower Pleistocene site formation and hominin occupations at Dmanisi in the Georgian Caucasus</td>
</tr>
<tr>
<td>31 May</td>
<td>Huw Barton (Leicester)</td>
<td>Foragers in the late-Pleistocene rainforests of Borneo</td>
</tr>
<tr>
<td>7 June</td>
<td>Paul Pettitt (University of Sheffield)</td>
<td>The aesthetics of surfaces. New research on hand stencils in French and Spanish cave art from experiment to observation</td>
</tr>
<tr>
<td>14 June</td>
<td>Bruce Bradley (Exeter)</td>
<td>Across Atlantic ice: the origin of America’s Clovis culture</td>
</tr>
<tr>
<td>18 October</td>
<td>Sarah Finlayson (University of Sheffield)</td>
<td>The meandering Paths of Writing in the Bronze Age Aegean</td>
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<tr>
<td>1 November</td>
<td>Barry Molloy (University of Sheffield)</td>
<td>Malice in Wonderland: the role of warfare in Cretan societies of the Bronze Age</td>
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<tr>
<td>15 November</td>
<td>Sam Farnham (University of Nottingham)</td>
<td>Pollution and purity in the Corinthia during the Early Iron Age</td>
</tr>
<tr>
<td>29 November</td>
<td>Emma Johnston (University of Bristol)</td>
<td>Recreating the tephra dispersal pattern and seasonality of the Bronze Age eruption of Santorini (Greece)</td>
</tr>
<tr>
<td>24 January</td>
<td>Kristin Leith (University College London)</td>
<td>The shaft grave Penthissileia</td>
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<tr>
<td>7 February</td>
<td>Vana Orfanou (UCL)</td>
<td>Researching for the EIA Greece: bronze votive offerings from the sanctuary of Enodia at ancient Pherae</td>
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<tr>
<td>21 February</td>
<td>Eleftheria Pappa (VU University Amsterdam)</td>
<td>Greek trade in the West? New finds and chronologies in the Iberian Peninsula</td>
</tr>
<tr>
<td>6 March</td>
<td>Joanna Palermo</td>
<td>Iron production in the Eastern Mediterranean: was Cyprus first?</td>
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<td>1 May</td>
<td>Petros Kounouklas (University of Bristol)</td>
<td>The Late Helladic IIIC Middle–Early proto-geometric settlement at Kynos in central Greece</td>
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<tr>
<td>15 May</td>
<td>Alexandra Markou (King’s College, London)</td>
<td>Mycenaean ritual wares in Late Cypriote context: comparing Enkomi and Kition</td>
</tr>
<tr>
<td>29 May</td>
<td>Eleni Karouzou</td>
<td>Changes in settlement patterns in coastal Thessaly, ca. 1200–900 BC</td>
</tr>
<tr>
<td>12 June</td>
<td>Daniel Sakellariou</td>
<td>The Islands of the Cyclades from the Bronze Age to the Early Iron Age: is the geographical term ‘Cyclades’ misleading for this period? and Vera Sichelschmidt Gods, heroes or humans? The early Archaic kolossos of the Naxians on Delos</td>
</tr>
<tr>
<td>26 October</td>
<td>Henrik Flammer (RLAHA)</td>
<td>Molecular Archaeoparasitology</td>
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<tr>
<td>2 November</td>
<td>James Blinkhorn (RLAHA)</td>
<td>Uncovering a landscape buried by the super-eruption of Toba, 74,000 years ago</td>
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<td>9 November</td>
<td>Isabella von Holstein (University of York)</td>
<td>Stable isotope analysis of archaeological wool samples</td>
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<tr>
<td>16 November</td>
<td>Professor Gabriele Macho (Institut Català de Paleontologia (ICP))</td>
<td>Hominin dietary ecology: how can we know and why does it matter</td>
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<td>23 November</td>
<td>Professor Tom Higham (RLAHA)</td>
<td>On the trail of John the Baptist: excavations on the island of Sveti Ivan, Bulgaria</td>
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<td>18 January</td>
<td>Simon Blockley (Department of Geography, Royal Holloway)</td>
<td>Star Carr and all that: environmental reconstruction and Late-glacial and early Holocene human occupation in North Western Europe</td>
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<tr>
<td>25 January</td>
<td>Simion McGrory (Department of Archaeology, University of York)</td>
<td>Dairy cattle, dentists and DNA: combining biomolecules and zooarchaeology to reconstruct ancient husbandry systems</td>
</tr>
<tr>
<td>8 February</td>
<td>Dr Hannes Schroeder (Centre for GeoGenetics, University of Copenhagen)</td>
<td>Back to the roots: targeted resequencing of full mitochondrial genomes yields insights into the ancestral origins of enslaved Africans</td>
</tr>
<tr>
<td>22 February</td>
<td>Professor Achim Brauer (GFZ German Research Centre for Geosciences, Potsdam)</td>
<td>Rapid climate changes recorded in varved lake sediments</td>
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<tr>
<td>29 February</td>
<td>Dustin White (School of Archaeology, University of Oxford)</td>
<td>The Baikal-Hokkaido Archaeology Project – Holocene hunter-gatherers of NE Asia</td>
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<tr>
<td>7 March</td>
<td>Dr Beatrice Demarchi (Department of Archaeology, University of York)</td>
<td>Breaking the egg: new perspectives on amino acid racemisation dating</td>
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<td>25 April</td>
<td>Mike Haslam (RLAHA)</td>
<td>Pounding tools project</td>
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<td>2 May</td>
<td>Keith Wilkinson (University of Winchester)</td>
<td>Middle–Upper Pleistocene geoarchaeology and geochronology of the Razdan Valley, central Armenia</td>
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<td>9 May</td>
<td>Robert Hedges (RLAHA)</td>
<td>Stable isotopes (C&amp;N) and Neolithic subsistence; what we have learnt from the LBK project</td>
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<tr>
<td>23 May</td>
<td>Katerina Douka (RLAHA)</td>
<td>Dating the arrival of the first modern humans in southern Europe using novel radiocarbon methods</td>
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<tr>
<td>12 October</td>
<td>Dr Ioana Oltean (University of Exeter)</td>
<td>Defining rurality in ancient Lower Moesia: a spatial approach</td>
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<td>19 October</td>
<td>Erik Carlsson-Brandt (University of Santiago de Compostela)</td>
<td>An archaeological approach to northwestern Iberia, rural settlement in Galicia during the Roman period</td>
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<tr>
<td>26 October</td>
<td>Dr Michael Squire (King’s College, London)</td>
<td>Visualising and verbalising epic on the Tabulae Iliacæ</td>
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<tr>
<td>2 November</td>
<td>Dr Ursula Quatember (Osterreichisches Archaeologisches Institut)</td>
<td>Was the Temple of Hadrian truly Hadrian’s temple?  New research on the monument on Curetes Street in Ephesos</td>
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<td>Dr Meaghan Mcevoy</td>
<td>On the different circumstances (and their political implications) of imperial baptisms in the 4th and 5th centuries</td>
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<td>16 November</td>
<td>Dr Jas Elsner</td>
<td>Art and rhetoric in Roman culture</td>
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<td>Dr Maaike Groot (VU University Amsterdam)</td>
<td>Livestock for sale: market-driven developments in animal husbandry in the civitas Batavorum</td>
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<tr>
<td>30 November</td>
<td>Dr Anthony King (University of Winchester)</td>
<td>Deposition chronologies for samian ware (terra sigillata) in the late 2nd to mid 3rd centuries AD, and their interpretation</td>
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<td>18 January</td>
<td>Professor Chris Howgego</td>
<td>The monetization of temperate Europe</td>
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<tr>
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<td>Kristine Merriman</td>
<td>The preservation and interpretation of organic residues in archaeology</td>
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<td>8 February</td>
<td>Dr James Andrews (University of Reading)</td>
<td>Up the wooden hill: rented apartments at Herculaneum and their impact on the urban fabric</td>
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<td>15 February</td>
<td>Meike Weber (University of Reading)</td>
<td>Quo vadis, terra sigillata? – Analyzing samian trade patterns in the north-western Roman provinces</td>
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<tr>
<td>22 February</td>
<td>Nicola Barham (University of Chicago)</td>
<td>Vital form: reassessing the status of ornament in the Roman world</td>
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<td>29 February</td>
<td>Dr Arthur Segal (University of Haifa)</td>
<td>Hippos-Sussita of the Decapolis: the town plan and architecture of a Roman provincial city</td>
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<tr>
<td>7 March</td>
<td>Dr Janet DeLaine</td>
<td>Hard truths about the economy of Roman construction – material, technology and scale; or, the trouble with columns</td>
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<td>Professor Jean-Pierre Brun (College de France)</td>
<td>The archaeology of water-mills in Roman Italy</td>
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<tr>
<td>2 May</td>
<td>Andrew Wilson</td>
<td>Water, nymphs and ‘the place of palms’: the Hadrianic Baths and South Agora at Aphrodisias</td>
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<td>Jean-Pierre Brun (Paris)</td>
<td>Roman water-mills in Gallia Narbonensis</td>
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<td>Annalisa Marzano (Reading)</td>
<td>Organization and methods of large-scale fishing in the Roman Mediterranean</td>
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<td>Dr Ross Burns (Sydney)</td>
<td>Turning the city inside out: the revolution in urban landscapes in the East under Rome</td>
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<td>6 June</td>
<td>Georgy Kantor</td>
<td>Mediterranean trade in the province of Lycia-Pamphylia: looking at documentary evidence</td>
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<td>13 June</td>
<td>Greg Votruba</td>
<td>Greek and Roman anchors: classification, distribution, reconstruction and experimentation</td>
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