

PAST

THE NEWSLETTER OF THE PREHISTORIC SOCIETY



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Bundles of joy? A hoard of Bronze Age goldwork from Woolaston, Gloucestershire

The Portable Antiquities Scheme has recorded several impressive Bronze Age gold finds in the course of the last two years, including two spectacular Early Bronze Age lunulae (from Thwing, East Yorkshire, and the Tarrant Valley, Dorset). Among the current crop are eight intriguing gold ornaments (treasure case 2013 T805), found together in three nested bundles in a pit deposit near Woolaston, close to the River Severn and the English-Welsh border.

The first two bundles were recovered in the course of metal detecting, the third (along with sherds of prehistoric pottery) by the local Finds Liaison Officer, Kurt Adams, and his colleagues, on returning to the site the following day. The British Museum was able to raise funds for Oliver Davis and Niall Sharples from Cardiff University to undertake further investigation of the immediate context of the find, demonstrating that the goldwork had been deposited in a single pit, possibly marked by a post.



Two of the bundles consist of two ornaments, one wrapped around the other; the third consists of four ornaments, the outermost with a lightly twisted gold 'ribbon' wrapped around its width. The ornaments that comprise each individual bundle are identical in both form and decoration. All eight ornaments are decorated by combinations of embossed and pointillé techniques and, although the quality of the execution varies between bundles, the style and register are closely related across all three. The form of the ornaments also varies to some extent but all are similarly shaped: tapering to fastening hooks at either end. In one case, both ornaments within the bundle have had one of their terminals clipped off prior to deposition.

The ornaments are undoubtedly difficult to parallel but do share features in common with goldwork of Middle Bronze Age date, most notably the substantially larger Capel Isaf bracelets or armlets from Dyfed, Wales. The composition of the Woolaston gold (by XRF analysis undertaken by Susan La Niece at the British Museum) does not contradict a Middle Bronze Age date. The presence of decorative techniques common in the Earlier Bronze Age embossed goldwork tradition (as defined by Stuart Needham) is curious and could represent continuity of the tradition into the Middle Bronze Age.

Several of the ornaments (with circumferences of *c.* 113mm) are too small to have been worn as bracelets by an adult, suggesting that they were intended for a child or infant. It is, of course, possible that they served other functions, such as earrings or hair ornaments, but their form and double-hooked fastening appears to suggest otherwise. The possibility that these ornaments were child-sized, if accepted, has obvious significance in relation to social hierarchy and inheritance.



The deposition of the ornaments fits within a wider practice of intentionally nesting and stacking ornaments within Middle Bronze Age 'ornament horizon' hoards of the Taunton and Penard phase (c.1400–1150 cal BC). There are now around thirteen known instances, including two Welsh examples that include bracelets made of gold: the

aforementioned Capel Isaf hoard and the Maesmellan hoard from Powys.

Additional study and analysis of the ornaments is planned once they have passed through the Treasure process.

Neil Wilkin, British Museum

A new Editor for PAST

After many years of doing a fabulous job, sadly Jo Brück will be leaving us as editor of *PAST* at the end of this year and, perhaps rather foolishly, I have agreed to step in. Some of you may already have met me at various Society meetings – I am a Neolithic specialist at heart, having completed a PhD on the central European Linearbandkeramik culture in Cardiff in 2006. This has left me with a rather unhealthy fascination for longhouses (although long barrows are fun too), but I have also researched mortuary practices and Neolithic figurative art. I am currently based at Hamburg University and have just introduced a bunch of German students to the delights of British prehistory, especially Dartmoor and its fantastic Bronze Age archaeology. Editing *PAST* will be a great opportunity to get to know more about all these other prehistoric periods as well, so please do send me your updates on fieldwork, surveys, finds and lab-based research, and anything else that you think is exciting (providing it is archaeological, of course!).

Jo's work will be a hard act to follow, but I look forward to being able to do something for the Society and hope that I can keep *PAST* the vibrant, informative and enjoyable newsletter that it is.

*Dani Hofmann, Archaeological Institute,
University of Hamburg*



EUROPA 2015 CONFERENCE

I am delighted to announce that the 2015 Europa conference will be held at University College Dublin between the 29th and 31st of May 2015 and the Society would like to thank Prof Gabriel Cooney for offering to host this. The recipient of the Europa Prize this year will be Prof Friederich Lueth of the German Archaeological Institute and the broad theme of the conference will be the Origins of Monumentality. Friday will principally be devoted to younger researchers whilst on Saturday invited speakers will reflect the research interests of Prof Lueth. We are hoping that there will be an optional field visit on Sunday 31st – details to be confirmed.

Alex Gibson

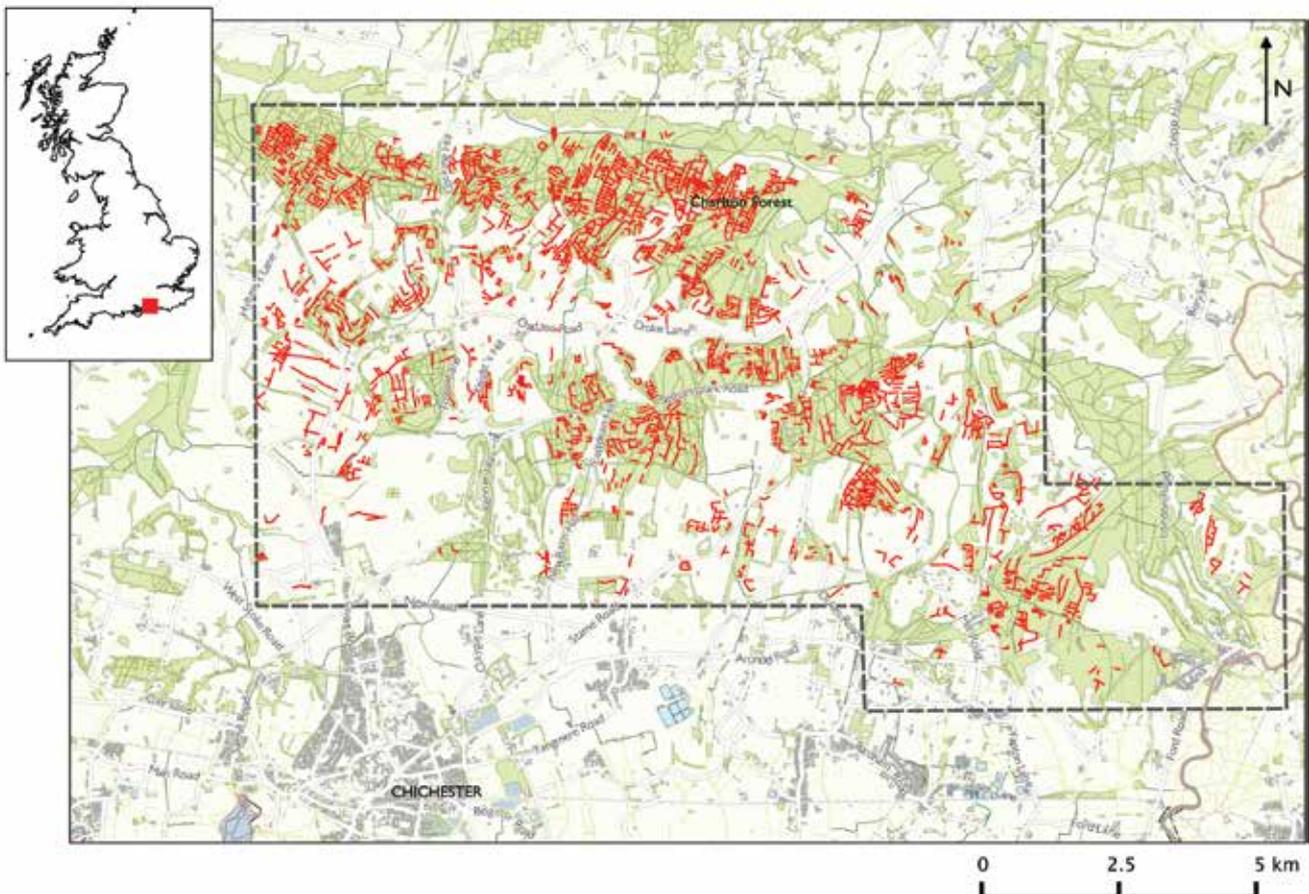
An undiscovered county? New field systems found on the South Downs

In a recent issue of *PAST* (75, October 2013), David McOmish and Gordon Hayden reported on their work, with the Sussex Archaeological Society, excavating an Iron Age enclosure at Goblestubbs Copse, West Sussex. As I grew up in the area, I was well aware of the various ‘lumps and bumps’ in the woods, very few of which are recorded, and I was intrigued to see if there was anything else of interest hidden by the trees. The woods in the Arundel area are quite dense, making traditional survey using a total station or GPS rover time-consuming and logistically difficult. The only other viable alternative is to use LiDAR (light detection and ranging) to ‘see through the canopy’. The use of LiDAR for prospection and the discovery of new archaeological sites or features is now relatively commonplace. Recent projects in the New Forest, New England and the in-progress ‘Secrets of the High Woods’ LiDAR survey of the South Downs National Park are evidence of its efficiency in revealing hidden features within the wooded areas of the world. However, even knowing something of its efficiency, the results of the analysis of a LiDAR survey can still be startling and can often reveal a hitherto hidden landscape, in this case quite literally right in one’s back garden.

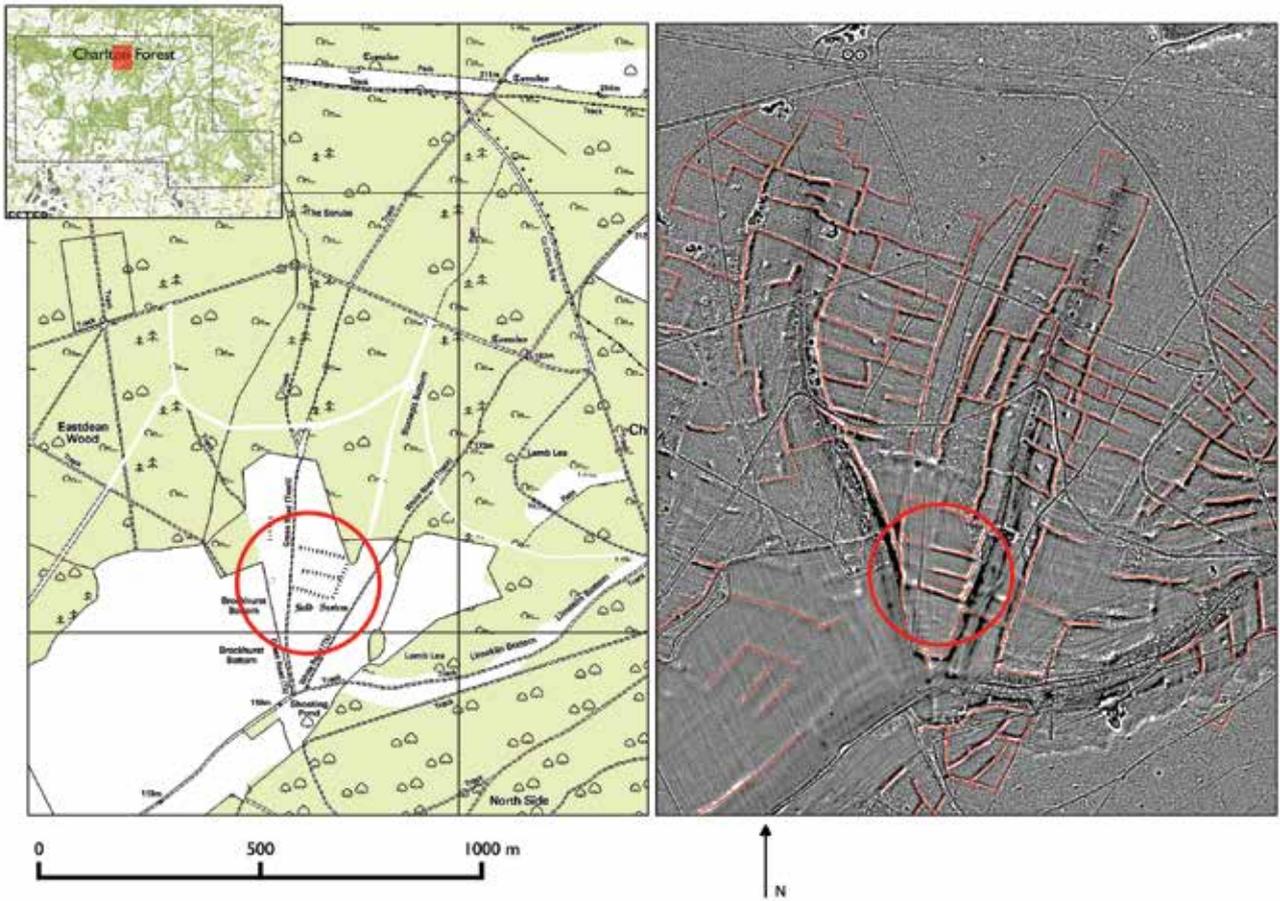
The Environment Agency (EA) has a collection of LiDAR data, mostly used for analysing floodplains and water management, and they have recently opened this archive

for use by academics and non-profit organisations. The EA LiDAR has been flown at a number of different resolutions, and for the Arundel area the available resolutions are at 1m and 2m in the horizontal plane and $\pm 15\text{cm}$ in the vertical plane. This means that every pixel in the data relates to a $1\text{m} \times 1\text{m}$ square on the ground, and as such only archaeological features bigger than this can be identified. Greater resolutions are available, and indeed, the ‘Secrets of the High Woods’ project has flown a new set of LiDAR missions at sub-centimetre resolution. However, the 1m and 2m resolution EA data can still reveal a massive amount of information when analysed within a GIS.

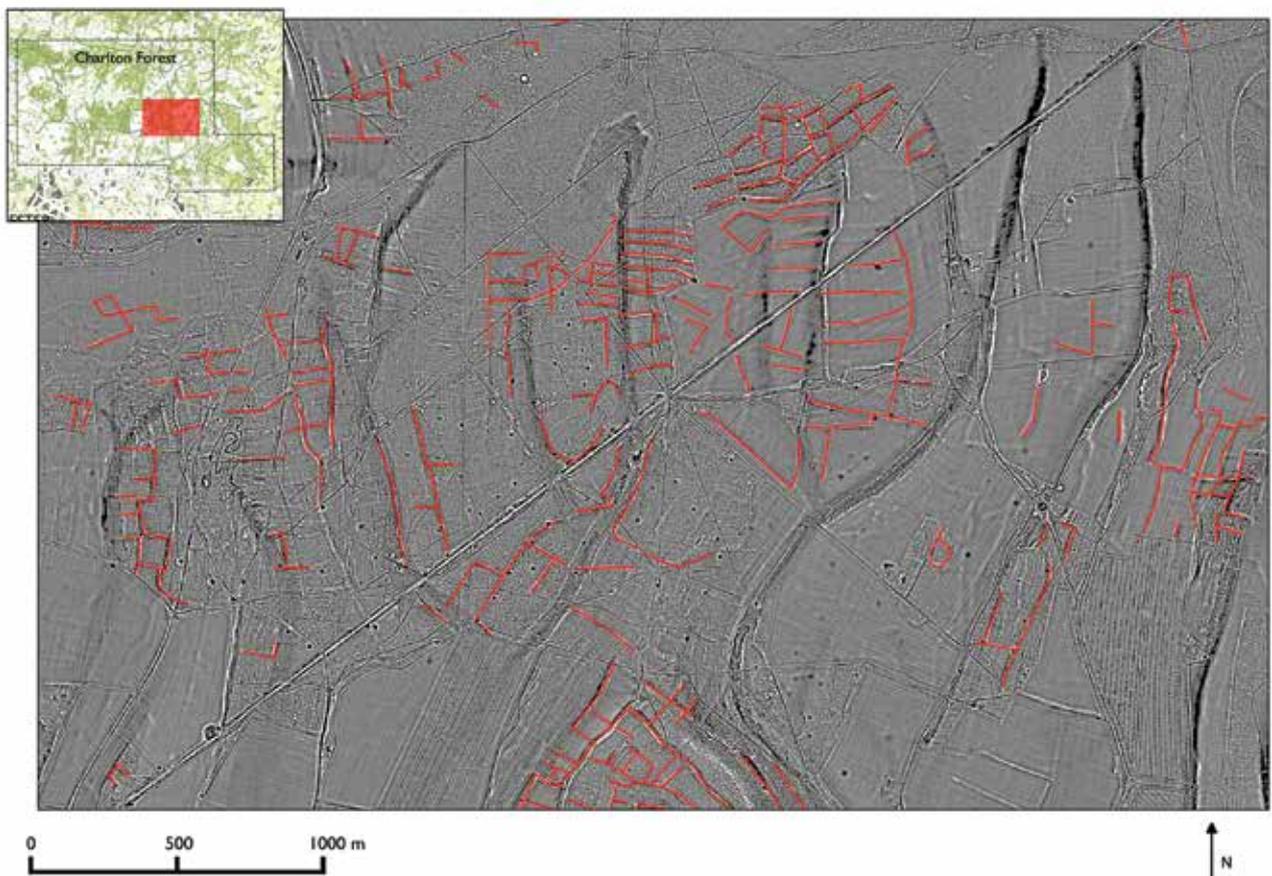
Using a method called Local Relief Modelling (LRM), which isolates subtle local relief changes from global relief changes, it is possible to identify the low relief features, such as banks or ditches, that may represent field systems or other buried archaeological remains. Applying the LRM methodology to the EA LiDAR of an area of $c. 150\text{km}^2$ to the northwest of Arundel brings into sharp relief a mass of previously unknown features. As can be seen in the figure below, the number and extent of the features hidden within the wooded areas of the South Downs is astonishing. Each of the red lines is a previously unknown bank or ditch, showing that almost all of the spurs of land above the river and tributary valleys were covered with field systems.



The study area, with identified features are shown in red



Lamb Lea field system, showing new features revealed by LiDAR under the forest canopy



Truncation of the field system east of Eartham Woods; Stane Street can be clearly seen running northeast–southwest

As an example of the number of hidden earthworks we are talking about, we can look at the already known field system of Lamb Lea near Charlton Forest, north of Chichester. The field system at Lamb Lea is a Scheduled Monument, and the three banks that make up the monument are quite clear on the ground when walking over the area. When looking at this area using the LiDAR, however, a quite different extent of the field system is revealed. As can be seen here, the scheduled part of the field system is just one small part of an extensive system that runs right through Charlton Forest.

The dating of these features is problematic without extensive ground-truthing of the LiDAR data. However, by comparing some of the field systems to known or existing archaeological features it is possible to infer some dates. For example, when looking at the hitherto unknown field systems to the east of Earham Woods, clear evidence of truncation by Stane Street can be observed, providing a *terminus ante quem* of the early Romano-British period.

It would appear that the majority of the systems are coaxial, with the dominant axis following the topography. Taking the systems in Charlton Forest as a sample, the size of the individual plots is on average 0.69ha, which is quite large compared with the normal sizes seen across Britain (0.05-0.5ha). However, it is not so unusual when compared with the other known systems on the South Downs. Where it is possible to measure individual systems, the length of the main spinal axis is between 0.8 and 1.2km and discrete systems enclose around 2km² on average.

The LiDAR analysis presented here has been undertaken using data provided by the Environment Agency free of charge under an academic licence using the *r.local.relief* package with the GRASS GIS system. In order to fully refine our picture of the field systems, the data needs to be systematically ground-truthed and, if possible, dating evidence recovered via surface collection or excavation. It is hoped that the 'Secrets of the High Woods' project will do just that, and the exciting picture that is emerging from the LiDAR data can be confirmed and fully analysed. What is already clear, however, is that these systems would have supported a thriving community across the South Downs, and their discovery will raise many questions and perhaps offer some answers concerning the subsistence economy during later prehistory on the downlands. The present South Downs are one of the most densely wooded areas of Britain, and it is very easy to imagine that it has always been that way. These findings show that during the later prehistoric period at least, the hillsides and ridges were not wooded and were instead heavily exploited and covered with enclosed fields and people working the land.

Acknowledgements

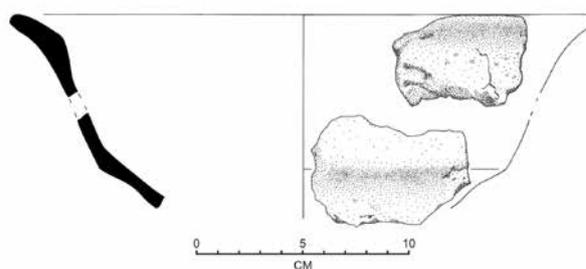
The digitising and transcription of the archaeological features was kindly undertaken by Ashley Kruger, and thanks are due to David McOmish for helpful discussions of field systems on- and off-site.

*Dr Stuart Eve, Honorary Research Associate,
University College London*

An Early Neolithic pottery vessel from Cockermouth, Cumbria

Recent excavations on a housing development site at Fitz Park on the southwest edge of Cockermouth (funded by Lovell Partnership) uncovered the fragments of a pottery vessel. They were recovered from the lower deposits of a silted-up palaeochannel and represent about a quarter of a single vessel: a Carinated Bowl of early Neolithic date. A charred cereal grain of emmer wheat (*Triticum dicoccum*), ten charred hazelnut shell fragments and charcoal fragments (probably oak with possibly a small amount of ash and beech) were also recovered from the sediments which yielded the potsherds. The charred grain produced a radiocarbon measurement of 3707-3638 cal BC at 95% confidence (4886 ± 29 BP; SUERC-52877).

The palaeochannel, situated c.110m south of the present-day River Derwent, is one of a series that flowed along the valley floor in the mid-Holocene. The distribution of the organic matter with the potsherds, along with the fine-grained nature of the sediment in which they were found, suggests that the palaeochannel had become silted up and cut off from the flow of water when the deposition occurred. The potsherds, spread over a distance of 20m, have crisp



edges, some of which conjoin. It appears that the vessel was broken and then deliberately deposited in standing water, reminiscent of a similar practice that took place at the Sweet Track in Somerset, where fragments from the same type of Carinated Bowl were found distributed some distance from each other on either side of the wooden trackway. The early thirty-seventh century BC date for the Cockermouth act of deposition, a possible votive offering in a watery context, occurred some hundred years or so after the construction of the Sweet Track (dated by dendrochronology to 3807/6 cal BC), indicating the potentially widespread nature of this practice in England in the early fourth millennium BC.

*Scott Williams and Robin Holgate,
Archaeological Research Services Ltd*

Carwynnen Quoit: a ROCK ON spectacular!

The final stages of a community archaeology project to restore one of Cornwall's lost megaliths, Carwynnen Quoit, near Camborne, reached a major milestone on midsummer's day this year when the 10-ton capstone was successfully lowered onto the tips of the three uprights. The event was watched by a crowd of over 600 enthusiasts and supporters of our project: the ROCK ON event at Carwynnen was an historic day for the local people of Carwynnen and Troon and, without a doubt, will be remembered by many for a very long time.

This project has been commissioned by the Sustainable Trust and is delivered by Historic Environment (now Cornwall Archaeological Unit) Cornwall Council, and has been reported in earlier editions of *PAST* (see 62 and 74). It began as a series of excavations which started in 2012 and continued right up to the spring of this year. Over a number of seasons the original footprint of the monument was revealed as the site had lain buried under a neglected pile of large stones for over 50 years since the monument's collapse in 1966. The original socket holes for the three granite supports were discovered alongside the partial survival of an original stone pavement. Finds of early and later Neolithic pottery and flints (many were burnt and snapped tools) as well as Bronze and Iron Age pottery have been found during the excavations and reveal the enduring appeal of the monument for generations of prehistoric communities in the wider landscape. There was no definite evidence for human burial at the site although two discrete deposit of burnt bone and charcoal were found towards the rear of the chamber floor. A sample has been submitted for scientific dating and results are awaited.

The three uprights, all distinctively-shaped dressed granite menhirs, have now been restored in their original sockets – with some slight forward adjustment to the single support (Stone 2) at the front of the monument where the ragged



The moment of truth as the capstone at Carwynnen Quoit is lowered back onto its faithful supports at 3pm on 21st June 2014 (© Jacky Nowakowski, Cornwall Archaeological Unit)

edges of the socket hole showed that it had been disturbed by animal burrowing. The original stone pavement – made up of thousands of hand-picked small stones – now lies buried and protected under a built-up artificial surface. The reconstruction of this pavement – our 'living' pavement – has now begun and we anticipate that this will develop over time as visitors are encouraged to bring along special stones and leave them as tokens of their visits. To date small pebbles and stones from around the Cornish landscape – serpentines from the Lizard, granites from West Penwith and Bodmin Moor – have been laid down alongside small stones which derive from outside the county: small pieces of bluestone from the Presceli mountains in southwest Wales and from St David's Head, and even a stone from the Algarve!

Alongside the excavations the monument's principal stones have been studied by white light scans. The main stones show clear signs of having being dressed and there were faint dimples on the underside of the massive capstone where the pointed tips of the three supporters touched the stone. Other areas of the field in which Carwynnen stands have been test-pitted since 2012 and finds of prehistoric pottery and flint have been found across the entire area. The remnant stone walls of earlier fields have also been found alongside a number of grounded moorstones. A couple of these displayed intriguing markings (some mechanically created by the plough but others hand-made and less easy to explain). Their analysis by Tom Goskar continues as does geophysical surveys which are currently exploring a wider area around the site. Further study of the wider landscape of Carwynnen forms part of future plans as this community project reaches one of its major goals and sets out future challenges.

The monument has now come to life and its restoration has inspired and revealed a new sense of regaining something local and significant that was once lost. The entire project has been a fascinating process with community ownership and engagement operating at a level that has released the latent poignancy of this ancient monument. The contemporary restoration of Carwynnen has shown how such monuments can inspire a community to come together with common purpose, participate in original research, reclaim and celebrate their local heritage.

A fully illustrated commemorative booklet on the project will be available by donation by the end of this year and an article on the project will feature in a future volume of *Cornish Archaeology*. For further details on the project and updates please visit the website www.giantsquoit.org and the Carwynnen facebook page, or contact Jacky Nowakowski at Cornwall Archaeological Unit (jnowakowski@cornwall.gov.uk) and/or Pip Richards at the Sustainable Trust ([pip.sustrust@gmail.com](mailto:pipe.sustrust@gmail.com)).

Jacky Nowakowski, Cornwall Archaeological Unit

Got milk? The dairying revolution in temperate Neolithic Europe

The introduction and spread of cattle-based agriculture by Europe's Neolithic farming groups re-shaped prehistoric culture, biology and economy in ways that underlie modern life virtually worldwide. This shift in human subsistence strategy resulted in the widespread dissemination of dairy economies globally and the evolution of Lactase Persistence (LP) in Europeans. Indeed, it can be argued that today's multi-billion Euro modern dairy economy is a direct consequence of human-induced biological reformulations made during this important phase of European prehistory.

NeoMilk, a five-year project led by University of Bristol, in conjunction with the University of Exeter, University College London, CNRS Paris, and Adam Mickiewicz University Poznań, aims to determine exactly when, where and why this transition to full domesticate-based farming occurred. The working hypothesis is that dairying emerged within central European *Linearbandkeramik* (LBK) society at some point during the sixth millennium cal BC. Pilot organic residue analysis of pottery from the early LBK sites Wang and Niederhummel, the former with more than 50% wild taxa, showed an absence of milk fat residues, while there was a clear milk fat signal at the late LBK site of Ludwinowo, where cattle were dominant. Through a systematic programme of organic residue analysis, zooarchaeological analysis and computer modelling, the NeoMilk project will for the first time provide a fully integrated picture of animal exploitation and milk use across the entire spatiotemporal range of the LBK, from the Ukraine to the Paris Basin.

NeoMilk comprises three articulating research themes. Theme 1 focuses on the organic residues of milk and other products in LBK pottery. Lipid biomarker and stable isotope compositions of food residues from these vessels will provide qualitative and quantitative assessments of the major animal products acquired and processed within LBK society. These

results will allow us to test whether the LBK was the core region for the emergence of the European Lactase Persistence gene variant (which allows humans to digest milk beyond infancy). Theme 2 examines domesticated animals in the LBK, using state-of-the-art zooarchaeological analyses to identify herding and slaughtering practices, butchery practices and the nature of meat and fat exploitation, as well as the composition of wild and hunted species. A range of isotope analyses on domesticated animal teeth and mandibular bone will also be used to define seasonal herd management and weaning strategies. Combined, such techniques will hopefully reveal trends in LBK animal exploitation and husbandry, particularly in relation to the intensification of cattle herding and milking. Theme 3 involves chronicling, mapping and correlating patterns of environmental and cultural change related to animal management and milk use. Archaeological evidence (such as settlement and funerary remains), palaeoenvironmental records, and isotopic and dating evidence from the pottery residues and animal remains will be integrated into an explicit spatio-temporal model. This will allow us to test the hypotheses that i) regional and temporal variation in environment and climate correlate with domestic faunal subsistence strategies and socio-cultural variations (such as evidence for hierarchy and differential access to resources), and (ii) changes in subsistence and a shift to a mainly dairy-based economy during the LBK was a critical driver in the evolution of LP and dairying in Europe.

NeoMilk is funded by an ERC Advanced Investigator Grant (2013-2018) awarded to Richard Evershed and is just over a year into an intensive schedule of sampling and analysis. Full details of the project, and updates as it develops, can be found at www.neomilk-erc.eu, which will be going live in the coming weeks.

Jessica Smyth, University of Bristol

People in prehistory: houses and households

On 1st of March of this year, the Prehistoric Society held an enjoyable and informative conference on 'People in prehistory: houses and households'. The conference began with a general introduction by Niall Sharples contextualising the day's papers within the conference series entitled 'People in prehistory', a day-conference each spring for three years. The series progresses up the social scale from individual to society, this second day-conference addressing the identification and categorisation of the house and household from the Neolithic to the Iron Age.

The papers started and ended in Europe, but the core of the day focused on Britain. Dani Hofmann gave a useful summary of two Neolithic lakeside settlements in Switzerland: Hornstadt-Hörnle and Arbon-Bleiche. The

waterlogged ground blesses the area with good preservation, which enables precise dating through dendrochronology and a remarkable picture of the dynamism and sequencing of the settlements. Hofmann argued that houses, which were small and closely spaced due to an encircling stockade, only lasted 15 years and demanded major repairs after six. The settlements, which displayed very little public architecture or spatial focus, were organised in house-lots, which alternated between being occupied and vacant by what seemingly was a very mobile society. Supported by a clear spatial pattern of consumption in both sites, Hofmann characterised the settlements as egalitarian with specialised production and reciprocal forms of exchange – a system that apparently lasted for hundreds of years and is similar in pattern to nearby dry-land sites.

Alasdair Barclay followed with a report on the ongoing excavations at the little-known area of Kingsmead, a gravel quarry site on the middle Thames. The site is being 100% excavated, and although the artefact analyses are pending, cultural activity stretches from the Mesolithic to the Roman period. Four 6–7m-long Neolithic houses typical of the British Isles were identified through numerous pottery sherds and flint scrapers, as well as post holes and split planks. They date from 3800 to 3300 BC and were possibly in use for 70–200 years. Although analysis has yet to be completed, Barclay attempted a partly functionalistic interpretation of the inhabited space aided by 2½D visualisation. One of the houses, Horton 2, was represented with a raised floor accessed by a ladder for dormitory purposes, thereby challenging the 2D ‘gods-view’ so readily adopted by archaeologists.

Mike Parker Pearson reported on finds of Late Neolithic Grooved Ware-associated houses at Durrington Walls. These were quite ephemeral structures in use for 10–20 years (aligning with phase 2 at Stonehenge, 2515–2470 BC) with stake foundations, chalk floors, sunken central hearths and cob/daub walls; they were constructed in an inverted basketry form. They are similar in layout to houses at Skara Brae, although there are a variety of types at the site. Faunal evidence shows pigs being brought from across the country, and mainly slaughtered for autumn and winter feasting but with a few throughout the year, suggesting seasonal occupation with a permanent caretaker community. Parker Pearson relates the site to the building of Stonehenge, rather than ongoing ceremonial usage. Although the substantive observations are interesting, one of the most significant contributions of this research is methodological in observing that the archaeological signatures for such ephemeral structures are located merely 6 inches below the surface. This might explain their ‘absence’ in the archaeological record, and current excavation methods needs questioning.

Colin Richards examined the Neolithic houses of Orkney, starting with Knap of Howar and noting the accepted development of stalled houses into stalled tombs starting around 3600 BC. However, Richards argued a significantly more complex picture. Various houses, such as Wideford Hill, Ha’breck, and Smerquoy, show evidence of earlier timber phases before the later stone houses (c. 3600–3500 BC), implying that timber houses and stalled tombs were commissioned and used during the same period. The shift in building material and increased investment of resources in the construction of houses begs the question why, and Richards commented that either driftwood was simply unavailable in Orkney or, perhaps, living spaces gained importance in mediating the legitimacy of one’s socio-political position. He also covered the remarkable buildings of the Ness. These big houses, similar in form to those at Barnhouse, appear to be an expression of social volatility and competitiveness. This is perhaps analogous to the Ring of Brodgar, where stones came from many different parts of the islands, and which perhaps formed an arena of competition for different communities across the archipelago.

Richard Bradley began the afternoon session with an intriguing paper entitled ‘Living in a circular world’, which was to become a focal point of the discussions at the end of the day. Previous studies have tended to adopt either a dimension or alignment approach in studying circular structures, but Bradley argued persuasively for considering these in tandem. Using several case studies, he illustrated the problematic typological distinction between house and non-house and raised the question why roundhouses – unlike stone circles – are interpreted functionally. Bradley thereby drew attention to the uncomfortable issue in archaeology (and especially in early prehistory) of defining a house, which unquestionably is of paramount importance for the study of houses and households in British and European prehistory.

Stratford Halliday was faced with the task of following this thought-provoking presentation, but his talk ‘Over the hills and far away’ followed suit in ‘rocking the boat’ by questioning well-established concepts of settlement regionalism in Middle Bronze Age Scotland with potentially far-reaching implications. The argument boils down to a simple yet powerful observation that the apparent regionally-homogeneous settlement pattern is more accurately described as a fragmentary kaleidoscope of local sub-groups. Yet Halliday not only encouraged students of British prehistory to reconsider this first view, but also the longevity of the structures themselves. This was argued for hut and stone circles, hillforts and roundhouses, which only serves to underscore the broad scope of the paper.

The latter appeal by Halliday was subsequently addressed by Oliver Davis in a substantive study of the Iron Age hillfort at Danebury, thereby concretising general ideas from the previous talk. Davis clearly and convincingly argued for changes in house formation and orientation over the Iron Age from a substantial corpus of 73 houses. Owing to a well-defined chronological sequence, significant shifts were identified. Early Iron Age occupation consisted of individual households spaced apart. The occupation increasingly gained a uniform expression during the Middle Iron Age with houses, now tightly packed in rows, primarily facing east-southeast, and followed by possible abandonment expressed as fewer houses devoid of dominant orientation. Reflecting upon Clark and Parker Pearson’s previous interpretive frameworks, Davis concluded that the situation at Danebury could be understood as conformity through cosmology.

In the closing paper, Leo Webley presented a comparative European perspective on Iron Age houses and households. Several similarities and differences in functionality, organisation and alignment across Europe were discussed. Emphasis was placed on adopting a wider framework for the study of Iron Age houses while simultaneously recognising the limitations due to the importance of local variability and trends. Although a macro-perspective is surely not without considerable gains, we could not help wonder if higher temporal resolution, as previously advocated by Davis, would significantly alter the identified trends.

The afternoon session was followed by a lively and enlightening debate including recurrent comments on the utility of Lévi-Strauss's theoretical framework of house societies. Yet, a critical and teasing question by Richard Bradley following comments by Mike Parker Pearson attracted considerable attention: 'why are hillforts not houses?' Bradley essentially expanded his presentation by questioning a well-established category of prehistoric structures, and it might appear that all architectural types warrant questioning of their fundamental legitimacy.

The conference was a success with several important insights and thoughtful contributions by drawing attention to

significant methodological (Mike Parker Pearson) and theoretical/typological (Richard Bradley, Stratford Halliday) issues in present approaches to the study of prehistoric house and households. Dani Hofmann, Alisdair Barclay, and Oliver Davis provided keyhole case studies of advances where high temporal resolution has been achieved, whereas issues of broad geographical and temporal concerns were tackled by Colin Richards, Naill Sharples and Leo Webley.

The third conference in the series is scheduled for next spring, and we recommend that readers keep up-to-date on news of this and other events via the Prehistory Society homepage.

*Mads Jørgensen & Simon Maddison, Masters students,
Institute of Archaeology, University College London*

Professor Magdalena Stefania Midgley (1952–2014)

It is with great regret that I report the sad loss of former council member (1992–1996) Professor Magdalena Midgley, Professor of the European Neolithic at the University of Edinburgh. Magda came from Poland to study archaeology under Stuart Piggott and went on to complete her PhD at Edinburgh on the earthen long barrows of northern Europe. Magda joined the staff in the Archaeology Department in 1989 and received a personal chair in 2013. Her main area of teaching and research was the archaeology of north European farming communities on which she published widely. Her books, *TRB culture: the first farmers of the North European Plain* (University of Edinburgh Press, 1992) and *The Monumental Cemeteries of Prehistoric Europe* (Tempus, 2005) became standard text books. Despite her north European focus, Magda took part in fieldwork projects all over Europe. She has influenced generations of students through her excellent teaching and with good humour to match.



Magda at the Dolmen Aguas Tuertas in the Pyrenees (courtesy of Ian Ralston, University of Edinburgh)

She will be greatly missed by all who knew her and the Society's sympathy is extended to her family.

Alex Gibson

Prehistory in primary schools

Since September 2014, prehistory has been included in the primary schools' National Curriculum. Camp Primary School in St Albans has taken to this topic with great enthusiasm. At the start of term, Years 3 and 4 (aged 7–9 years old) carried out a dig on the school field, where they learnt how archaeologists find, excavate and record sites. Since then, the children have been putting their archaeological knowledge to good use and have been studying prehistory from the earliest evidence for humans in Britain through to the Iron Age: they even put on an amazing school assembly about the Red Lady of Paviland! Several past and present members of Council have been assisting: David McOmish was interviewed about his archaeological career, Josh Pollard guided us around Stonehenge and Matt Pope answered emailed questions about the Palaeolithic.

The children have hugely enjoyed this topic and wanted to share their learning with our members. Some notable quotes from the children...

'I really enjoyed digging with my friends...From a distance Stonehenge looked tiny, but close-up the stones were massive...I liked finding the brooch with glass stones...I enjoyed experiencing life as an archaeologist...I liked it when we researched our finds...I loved seeing the biggest stone at Stonehenge...I got excited when we found our first piece of flint...I got excited when we found our first piece of pottery and worms...I liked pretending to live in the Neolithic huts...I liked David McOmish coming to talk to us... The best thing about prehistory is that it goes all the way up to history...I got excited when we found pieces of animal bone...We found



Years 3 and 4 with Josh Pollard at Stonehenge



A valiant attempt at moving a sarsen!

some old jewellery and were thrilled...I liked the dig at school; it was fun...I enjoyed seeing Stonehenge...I liked touching the animal skins in the Neolithic houses...I have enjoyed EVERYTHING we did.'

Our experience at Camp School has shown that prehistory is certainly a very interesting curriculum area and, despite the huge timescales and sometimes intangible remains, has the ability to create great enthusiasm amongst even the

youngest of children. When asked who wanted to be an archaeologist, almost all raised their hands. So watch out for them in the future: they may well become the next generation of prehistorians!

The Prehistoric Society is putting together a range of free and trusted teaching resources/games relating to prehistory on our website. Please email Tess at prehistoric@ucl.ac.uk if you have any useful links.

Excavation of an Early Neolithic house and other features at Yarnbury henge, West Yorkshire

In 2013, a season of geophysical survey, generously funded by the British Academy, was undertaken by Bradford University and a team from the Ludwig Boltzman Institute for Archaeological Prospection and Virtual Archaeology in Vienna. This focussed on the single- and double-entranced enclosures at Threshfield in the Wharfe Valley and at the well-known, small, single-entranced enclosure at Yarnbury near Grassington. In June 2014, a small exploratory excavation was undertaken at Yarnbury, the aim of which was to obtain dating and palaeoenvironmental data by re-opening an old 1964 excavation trench across the bank and ditch and into the interior. There is little in the way of a report for that earlier excavation. It records the ditch as rock cut, the bank as being



The Neolithic house after excavation

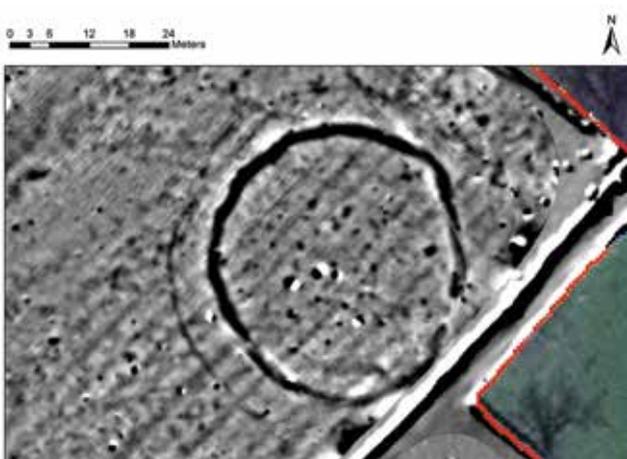


Students standing on the outline of the Neolithic house

of dump construction and the location of another previous excavation in the centre. There are no surviving plans or sections. A Collared Urn in Manchester Museum is recorded as coming from an excavation at Yarnbury in 1922–3 but the records do not specifically mention the henge.

The excavation confirmed the observations of the earlier excavator but unfortunately did not locate any dating material for the bank and ditch. Preliminary pollen analysis suggests that it was built in an area of open grassland with some sedge and pine but work is still very much in progress. It was clear, however, that after locating the central disturbance, the 1964 team did not dig into it. We did, though, and found pieces of Bronze Age Collared Urn in the backfill that appear to be from the vessel in Manchester: these sherds are still in conservation but the fine, twisted-cord decoration looks very similar. This of course does not date the bank and ditch but it certainly attests to use of the site in the early second millennium BC.

The geophysical survey also located a rectangular anomaly to the south of the henge. This measured some 7m × 8m and appeared to be of post and bedding trench construction.



Magnetic gradiometer survey of the northern henge, Threshfield

The strength of the signal suggested that it may have burnt down. A small trench was opened over the southwest corner of the structure and confirmed that our interpretation of the geophysical survey was correct. The structure had been disturbed by a later trackway but the postholes and bedding trench proved substantial enough to have survived this disturbance. Hazelnut shells were recovered from amongst the charcoal of the bedding trench and from a central hearth. One such fragment has provided a date of 3715–3634 cal BC at 91.7% probability (4885 ± 36; SUERC-54901) making it contemporary with similar Neolithic structures in Ireland and further south in England. Little in the way of material culture was recovered but some soft, friable pottery (currently in conservation) may well be from Carinated Bowl and a complete leaf-shaped arrowhead was recovered from the interior of the building during the cleaning off of the topsoil.

The geophysical survey at Threshfield revealed two henges with an internal ditch, external bank and a second, narrower ditch on the outside. The southern of the two henges is double-entranced and orientated northwest-southeast along the direction of the river valley. There appear to be pits below the bank and a large central pit. The northern enclosure is single-entranced with the opening to the southeast. There are traces of a slightly off-centre oval of pits, possibly a timber circle, as well as a number of other pits in the interior.

The Neolithic house and the newly discovered henges clearly add significantly to our knowledge of the Neolithic and Early Bronze Age of the Yorkshire Dales. Little work has been done on this period in this part of the Pennines other than at cave sites, and as more attention is given to the region and as more potential sites come to light, the Dales may prove to have been pivotal in facilitating contacts between east and west and the movement of Yorkshire flint and Cumbrian axes. The Yorkshire Dales currently appear as somewhat of a blank spot in Neolithic and Early Bronze Age distribution maps but this may be more apparent than real.

Alex Gibson, Archaeological Sciences, University of Bradford

Investigating rock art at Hendravernick 'Quoit', Cornwall

Background

The southwest of England is not well-known for its rock art: however, this may not be due to the physical lack of it, but rather that it has not been looked for. To amend this, a project was initiated to make a corpus of rock art in the region. It has so far recorded over 30 cup-mark sites (see Jones and Kirkham 2013, *European Journal of Archaeology*) and the number is still growing. A difficulty, however, lies with dating, as most sites have either been incorporated within monuments, such as the capstones of chambered tombs or the kerbs of round barrows, or are *in situ* blocks of stone surrounded by bedrock. With both scenarios it is difficult to identify the period when the carving occurred.

During several visits to rock art sites with Graeme Kirkham in the winter of 2012, it was found that one of them was different, and had the potential for the recovery of dating evidence. This site is known as Hendravernick 'Quoit' and is located to the northeast of Camelford just beyond the northern fringe of Bodmin Moor; it is situated above the headwaters of the River Camel, which lie a few hundred metres to the southeast.

Hendravernick was first described as a ruined megalithic tomb in 1911, but subsequent archaeologists have tended to dismiss the site as a natural collection of stones. Cup-markings were noted on the main stone, and it was for this reason that it was visited as part of the survey of Cornish rock art. It was immediately apparent that, while the exposed underlying bedrock was slate, the two stones comprising the 'quoit' were not naturally outcropping stones, but large unshaped blocks of epidiorite or 'greenstone', a type of stone which was used for making axes throughout the Neolithic period. This was of interest, as it was also noted that both stones were distinctly naturally 'axe-shaped'.

The smaller stone at the eastern end measured approximately 3m long and appeared nearly prone, with one end still embedded in the ground. To the west was the larger epidiorite block measuring over 5m long. Both stones are likely to have been obtained from the headwaters of the Camel Valley below, as many similar large stones, probably deposited during a period of glaciation, have been found there.

Following the inspection of the site, small-scale excavations at Hendravernick were undertaken in 2013 by the Cornwall Archaeological Society, and 8 test pits were opened up around the two stones.

Stone A

The smaller epidiorite stone was located close to the east of Stone B. Here, the 'cutting edge' of the axe-like stone was found to be embedded in the ground within a deep pit or socket. It is likely that it was originally an upright standing stone. A small number of cup-marks were identified on the upper surface stone but there was no apparent patterning. An Early Bronze Age radiocarbon determination 1742–1610



Hendravernick viewed from the south. Stone A, the fallen standing stone, is located on the right of the picture and Stone B, the large propped stone, is on the left

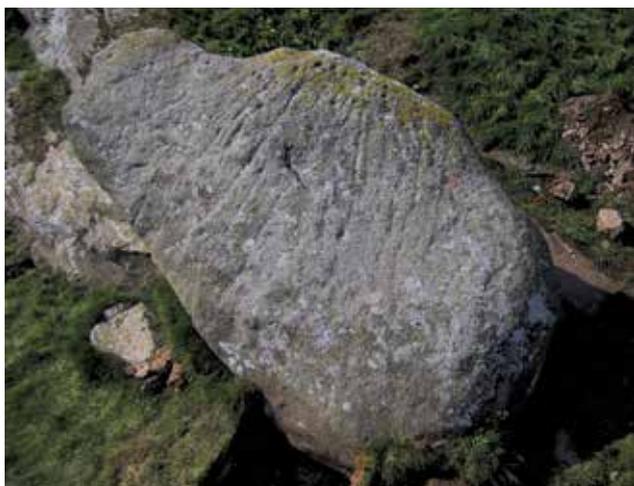


Stone A viewed from the west, showing excavation of the socket in progress

cal BC (3367 ± 26 BP; SUERC-53098) was obtained on *Corylus* charcoal from the bottom of the socket, implying that the standing stone was erected sometime after Stone B had been put in place.

Stone B

Stone B was the larger of the two. It had been propped on a slight angle so that the 'axe-shaped' profile sloped towards the river valley below and the headwaters of the River Camel. The eastern end was found to rest upon a low platform of slates which were probably obtained from the adjacent outcropping bedrock. One slate within the southern side of the platform was cup-marked, while other cup-marks were found on the outcropping slate bedrock around Stone B. The slate platform was edged with quartz blocks which had survived especially well on the northern side where the monument abutted against the outcropping bedrock. Many of the quartz blocks were water-rolled and it seems likely that they were obtained from the stream below too. A Late Neolithic radiocarbon determination was obtained on *Corylus* charcoal found at the bottom of the platform, and this dates to 2571–2350 cal BC (3963 ± 25 BP; SUERC-53100).



Stone B fully cleaned showing the rock art on its upper surface, with the concentration of cup-marks along the upper edge and radiating lines (note the indentation on the top left hand side was probably caused by an attempt to break Stone B up)

As part of the project, Stone B was cleaned and this revealed over 60 cup-marks. The majority of these were located along the upper edge of the stone, with a series of lines radiating down and out from these. Interestingly, this art was best viewed from the southeast and at times of low sunlight.

Carving the stones and activity on the site

Despite all the stone fragments being recorded from the site, there was no evidence for any debitage. This suggests that Stone B and possibly Stone A had already been carved before they were brought to the site. Epidiorite is exceptionally



The smashed greenstone mace-head, with the side of the shaft-hole showing

tough and carving would have required a hard stone such as quartz to make an impression upon it.

Large amounts of fractured quartz pieces were recovered from around the site, which initially were thought to represent breakages during carving. Study of this assemblage has, however, revealed that the quartz had not been used as hammerstones but was deliberately fractured as a result of direct impact. This raises the possibility that they were either broken to create a glistening area around the platform, or were smashed as part of ritual activity on site, perhaps making use of the 'magical' triboluminescent properties of quartz.

Continuing activity around the platform was evidenced by the deposition of artefacts during the Early Bronze Age. These included a segmented faience bead, an unusual form in Cornwall, as well as two flint arrowheads. Most significantly, near to Stone A was half of a perforated mace-head of epidiorite which had been smashed before burial near to the monument.

Conclusion

Although the investigations were small-scale, they revealed a significant amount of information about the site, and importantly have provided the first radiocarbon dating for a rock art site in England. The cleaning of stone B revealed it to be the most decorated rock art site discovered in southern Britain to date. It was found that the art was probably intended to be viewed from the south at the end of the day, in low sunlight when shadows were cast across the surface of the stone and the pattern revealed.

The investigations also suggest that the biography of the site was an extended one, with Stone B possibly carved some time before it was dragged to its platform at the end of the Neolithic period, and with activity taking place around it for several centuries afterwards. The siting above and overlooking the source of the river and most probably the source of the epidiorite stones is unlikely to be accidental, and neither are the axe-shapes or the materiality of the chosen stones, which may have been important symbols with powerful metaphorical associations.

Andy M. Jones and Freya Lawson-Jones

The northern England Pygmy cup assemblage – new research

Although Pygmy Cups (also known as Incense Cups or Accessory Vessels) have been well documented in the archaeological record, many reports acknowledge that little is known about the use or purpose of these small Early Bronze Age ceramics. New research is currently being undertaken to study the Pygmy Cups of northern England across an area that comprises Cumbria, Derbyshire, Lancashire, Northumberland and Yorkshire, and that stretches from the River Trent to the Scottish Border. There are currently 225 extant cups and the

aim is to compare and contrast these vessels with the purpose of producing a corpus to assist in the identification and classification of new material. Over 29 northern museums have been visited along with a number of private individuals who have Pygmy Cups in their collections. It has proven vital to inspect these objects at first hand given the technological information that they can provide. The kind cooperation of the curators, commercial units and private collectors who provided access to this material is acknowledged here.



Kirkoswald Old Parks from Cumbria, found containing 12 cannel coal beads and highly decorated



Southern Black Howe, a little plain unperforated cup from the North York Moors



The Cowlam Cup from the Yorkshire Wolds

In addition to creating a catalogue, the burial context, associated ceramics and artefacts are also being analysed to identify any patterns which may provide information on the purpose of these vessels. The early indications are that the occurrence of northern Pygmy Cups in direct association with Food Vessels is fairly rare, with only twelve known cases centred generally on East Yorkshire, where Food Vessel ceramics are relatively common. Direct association with Collared Urns has also proven to be less common than initially thought (40 examples), with a further 24 associated vessels described only as ‘urns or cinerary urns’. In only 13 cases are Pygmy Cups found with inhumation burials, and of these there is no clear pattern in the age or gender of the deceased. In contrast, there are 83 recorded cases of cups found in direct association with a cremation.

Pygmy Cups are commonly identified as having perforations. However, within the northern assemblage, 67% are unperforated with biconical unperforated cups clustering in North and East Yorkshire. There are only 4 fenestrated cups in the corpus and although these are often thought of as being prestige items, none have been found with any other high status grave goods. A significant number of the cups have been found to be firing wasters, with most displaying firing spalls; however, there are at least 20 which have catastrophic firing damage indicating they may have

been fired on the funeral pyre. Some of the cups have been found to have a white inlay but this appears to be restricted to a small number of incised examples; future analysis may prove this to be a paste mixture containing cremated bone as identified in the Welsh Breach Farm cup by Mary Davis.

More currently, there appears to be an emerging link between Pygmy Cups and metalwork, as cups with incised geometric decorative motifs seem to occur close to ore sources such as Alderley Edge and Ecton Hill, with a number of northwestern cups placed in locations which could have served as gateways to incoming Welsh and Irish metal sources. A cup from Ewanrigg in Cumbria has been directly associated with a tuyère, a tube used to blow air into the hearth. The potential for an east-west jet, amber and metalwork route can be suggested, with Pygmy Cup contexts in the northwest yielding examples of bronze artefacts whereas cup-associated burials containing jet occur more commonly in North and East Yorkshire. Linking both east and west of the study area is Blackheath barrow, Todmorden, where a late nineteenth-century excavation recovered four Pygmy Cups, Collared Urns, a bronze knife, a bronze awl, and jet, amber and faience beads. It must be pointed out that so far no Pygmy Cups have been found to have any residues directly indicative of metalworking though much more work needs to be done on this topic.

Debbie Hallam

Photogrammetric recording – new approaches to reconstructing archaeological features at the site of Taç-Cawla, Gozo

As part of the ERC-funded FRAGSUS project currently underway in Malta (a collaboration between Queen’s University Belfast, Cambridge University, Malta University, Heritage Malta and the Superintendence of Cultural Heritage, Malta), an experiment to record later agricultural features and a Neolithic house using photogrammetry has been undertaken. The recording of earth-cut features and unsubstantial structural remains is a long term problem in archaeology. The application of new technologies offers great scope for their precise recording, while also enabling the results to be made accessible to a wider public.

The FRAGSUS project, now in its second year of research in the Maltese islands, is focused on the reconstruction of environment, society and ancient economies. Together with pollen cores, population studies and other inter-disciplinary investigations, excavation of a rare prehistoric settlement is underway at Taç-Cawla, close to Victoria, Gozo. The site has exceptional earth-cut agricultural features dating from the Punic-Roman times, overlying a fragile Neolithic house.

Experimental photogrammetric recording has been attempted in order to fully explore the sequence of structures. In



Detail of textured model of Roman vine trenches from the site of Taċ-Ċawla, Gozo. Created from 202 photographs using Agisoft Photoscan.

particular it has successfully modelled a series of vine trenches in an area measuring approximately 8x4m. Although each model requires different considerations, in general terms the process adopted for creating a model is as follows: photography; alignment of images; creation of sparse point cloud; creation of dense point cloud; creation of mesh; texturing of mesh. Aside from the capture of images, the process is controlled by the software, although the user can intervene and take manual control of each aspect if this is required.

The results shown were created by processing 202 photographs in Agisoft Photoscan. These were taken around the trenches at positions varying in 45 degrees. In addition, photographs closer to the individual features were taken by standing at one side and taking one image to the photographer's left, one to the centre and one to the right. The process was then repeated for the other sides of the features. Experiments have included the use of varying camera resolutions and of different numbers of frames to build the models.

Currently, it has been observed that there are computational limits while working in the field and as such the highest quality models exist only as a dense point cloud, awaiting conversion to a mesh when more powerful hardware becomes available to use. This particular model was generated with 12-megapixel images, medium quality alignment of photos and a high quality mesh, this being as much as the computer could tolerate. Experiments with 18-megapixel images have revealed an extremely detailed point cloud, even on lower quality settings. However, the level of detail seems to require an intense amount of processing power, more than is currently available in the field. Investigation will persist in an effort to establish the most suitable methodology for high quality photogrammetry in the field.

This being said, even with medium settings the results are significant. The detail that photogrammetry provides is sharp enough to make it a usable record and, as it is to scale, it is possible to measure distances in programs such as Meshlab. It is a quick and easy way to record large areas, with the added benefit of conserving the third dimension of depth, which can aid interpretation in post-excavation. Overall, it proves to have great potential as an addendum to traditional planning.

A Neolithic house adjacent to the vine trenches, consisting of upstanding but slight stone walls, has also been recorded. It is smaller in scale (approximately 2x2m), but the amount of detail obtained is even greater. The results shown were obtained with a much lower number of images (26), using the same method of moving at a 45-degree angle between photographs. In this case, it was possible to obtain maximum settings in Agisoft Photoscan. It is also worth noting that similar results were achieved using Autodesk 123D Catch, which has the additional advantage of being open-source. Interestingly, a second model produced using more images gave a number of erroneous points, thus suggesting that with



Full-scale model of excavated area in Taċ-Ċawla, Gozo. Originally 8x4m in size, the finished mesh contains 606,500 vertices.

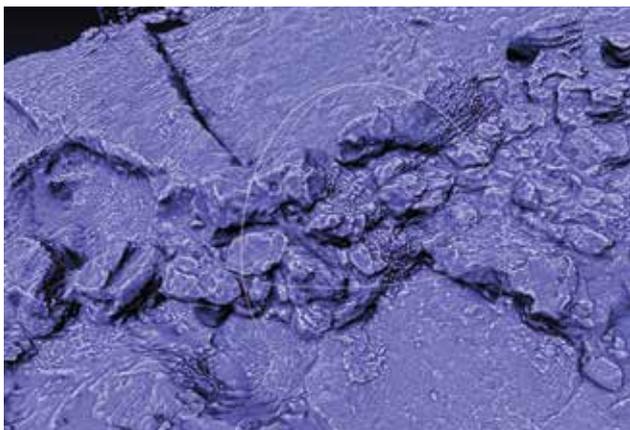


Textured model of Neolithic domestic structure from Tač-Ċawla, Gozo, with loose stone wall and floor layer.

smaller subjects fewer photographs equate to an increase in accuracy.

With the house model, the results are sharper and more visually appealing. The stones that form the wall are clearly recognisable, and the torba floor is splendidly rendered. The model provides a plan of the house, with good execution of details like walls, with which traditional recording struggles. It is also an improvement on photographic recording, as the additional depth makes it easier to comprehend the subject.

A final argument in favour of photogrammetric recording is accessibility. Given that a large portion of information is now



Wireframe of Neolithic wall, after Radiance Scaling in Meshlab, applied to emphasise individual stones.

entirely digital and the archaeological presence online is on the rise, models such as these are perfect to showcase results of excavations to the general public. In particular, they can be uploaded to websites (like <http://www.sketchfab.com>) so that people may view and interact with them. The models shown here are currently available at <https://sketchfab.com/models/6f6d1a8f0c6c4643a4a80515206cb163> and <https://sketchfab.com/models/2cb701d068a147f6aed7e7862c8f4310>.

In summary, the results of the FRAGSUS Photogrammetric experiment have served to record a plethora of features in a manner that transcends the usual techniques. Not only does this approach hold scientific value, but it also provides a rapid source of publically accessible material. Overall, these factors enable the FRAGSUS project to be on the cutting edge of archaeological research with a modern and interactive dissemination of information to the public – straight from the field.

The FRAGSUS project is indebted to the ERC for enabling the use of high-powered new technologies, and over the next 4 years, a number of landscapes, sites and environments will be explored, bringing much undiscovered prehistory to life.

For more information regarding the FRAGSUS project, please visit the website <http://www.qub.ac.uk/sites/FRAGSUS>

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Rob Barratt, Jeremy Bennett and Caroline Malone

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