Bronze Age animal footprints at Gwithian, Cornwall

Gwithian lies on the western side of St. Ives Bay on the north coast of Cornwall and is an area rich in archaeology. Mesolithic flint scatters have been found over a wide area, but it was the excavations led by Charles Thomas from the late 1940s to the 1960s that revealed Gwithian’s full potential. These were mainly in a sloping meadow to the north of the Red River, about 800m inland from the modern coastline. A Bronze Age settlement with evidence of three phases of occupation from c.1800 to c.900 cal BC was exposed, each separated by blown sand. In addition to the settlement, there was evidence of stone-walled fields with plough and spade marks. The area was largely abandoned during the Iron Age. There is a Roman homestead on the nearby Godrevy Headland. A post-Roman settlement with industrial activity was established on a sand dune adjacent to the Bronze Age site, active from the fifth to eighth centuries AD, again with evidence of agriculture shown by field systems. The excavations have never been fully published but a recent report provides a comprehensive summary of the work (Nowakowski et al. in Cornish Archaeology 46, 13-76).

During 2012 a small trench was opened in the meadow about 200m west of the Bronze Age settlement, close to one of the post-Roman field systems excavated in 1962 and 1964. This was part of a University of Reading PhD study investigating the palaeoenvironment of Cornish archaeological sites in areas of windblown sand, using molluscs as a prime indicator. A coring transect was undertaken from the Red River valley to the summit of Godrevy Towans, over a distance of 740m. In the area of the field system the number of molluscs was small and it was thought that a small excavation could provide additional samples for palaeoenvironmental analysis. With the support of Charles Thomas, who still owns the land, scheduled monument consent was obtained and a 2 × 2m trench excavated between the known post-Roman field and the margin of what is thought to have been a tidal inlet in earlier times.

Coring during 2011 had shown that the blown sand deposits were 1m deep at this location, and there was a probable buried soil horizon at 60–70cm depth, both of which were confirmed in the trench. A further buried soil layer was present at 85–94cm which overlay the old ground surface. Optically stimulated luminescence (OSL) dating is currently being undertaken of the sand horizons but correlation of the stratigraphy with the original excavations and with a small trench opened in 2005 in the area of the Bronze Age

The surface of the upper buried soil showing plough marks (*) and animal footprints; disturbance from rabbit burrowing is evident (scale: 50cm)
settlement suggests that these two buried soil horizons date to the Early Bronze Age (lower horizon) and Mid/Late Bronze Age (upper horizon). What was remarkable was the pattern on the upper surfaces of these soils, revealed as lighter marks with pale sand filling impressions in the darker sediment of the buried soils. They were quite clear despite disturbance in places by rabbit activity.

On the upper soil surface, there were two parallel linear features running north/south which are interpreted as plough marks; in section they have the typical ‘U’ shape with one side more sloping than the other. No such marks were present on the lower soil horizon. In addition, there were numerous oval impressions, mostly about 10–11 × 9cm in size, over the whole of the upper horizon (at least that area not spoiled by rabbit burrowing) but with only a few on the lower horizon. The size and shape are consistent with cattle hoof prints with some of the smaller ones being ovicaprid.

Prehistoric animal footprints are infrequent findings in archaeological excavations, and will only be preserved when they are impressed into soft wet sediment which is then overlain by contrasting material which is retained long enough to be buried. In Britain such prints have been found on the Welsh coast of the Severn Estuary and at Formby on the Lancashire coast. To find footprints in dry situations such as in windblown sand is unusual and is only likely when the burying sand accumulates rapidly and is of sufficiently different colour to the underlying sediment to remain visible at later excavation.

Mollusc analysis allows speculation on the nature of the land on which these animals were living. Large numbers of Vallonia excentrica were present in the upper buried soil (316kg '). When found in such abundance (22% of all shells in this layer) they are a marker for grazed grassland, making it likely that this part at least of the meadow was used as pasture during the Middle to Late Bronze Age; other taxa present are all consistent with a grass and open country habitat. In the lower soil horizon, there were only two specimens of Vallonia, implying that the land was not heavily grazed during the Early Bronze Age but was more likely to be long grassland.

An additional pointer to land use in the upper horizon is the presence of mussel shells (Mytilus sp.) scattered over the
A group of nine Early Iron Age inhumations was recently excavated on the site of a housing development (by Persimmon Homes) on the south side of the Avon valley, southeast of Salisbury, Wiltshire. The group is of interest not only because inhumations of this period are rare in Britain, but also because the burials lie just 200m downslope from the Early Iron Age enclosure of Little Woodbury, the type-site for enclosed Iron Age farmsteads on the Wessex chalklands and beyond. They throw light, therefore, on an aspect of life for which the excavation of Little Woodbury (by Bersu in the early 1940s) provided almost no evidence.

Early Iron Age inhumations outside Little Woodbury, Wiltshire

A group of nine Early Iron Age inhumations was recently excavated on the site of a housing development (by Persimmon Homes) on the south side of the Avon valley, southeast of Salisbury, Wiltshire. The group is of interest not only because inhumations of this period are rare in Britain, but also because the burials lie just 200m downslope from the Early Iron Age enclosure of Little Woodbury, the type-site for enclosed Iron Age farmsteads on the Wessex chalklands and beyond. They throw light, therefore, on an aspect of life for which the excavation of Little Woodbury (by Bersu in the early 1940s) provided almost no evidence.

It is known that ploughing was practiced at Gwithian during the Bronze Age but to this can now be added cattle husbandry and possibly also sheep and goats.

This work is part of a wider project to study the palaeoenvironmental history of the Gwithian site, especially in relation to episodes of dune sand blow. Coring of the sediments in the Red River adjacent to the prehistoric and later settlements has provided almost 10m of Holocene sediment including peats and silts with distinct episodes of blown sand deposition. These findings from the excavation provide new insights into the Bronze Age in the area and will correlate with additional results from the cores and dune sections at several other sites in the vicinity.

Thomas Walker and Martin Bell, Department of Archaeology, University of Reading

The graves and other Early Iron Age features, in relation the Little Woodbury and Great Woodbury enclosures
Six of the nine graves were arranged in three pairs, in a line 33m long running almost straight down the slope (from SSW to NNE). Within each pair, the graves were 2–2.5m apart; a seventh grave lay 5m east of the southwestern pair, while the remaining two graves lay c.50m from the line, one to the ESE, the other to the WNW. The graves were mostly sub-oval, 0.9–1.5m long by 0.7–1.1m wide, and up to 0.3m deep.

The northeastern pair of graves (4636 and 4652) contained the burials of a woman aged over 60 and another aged c.40–50. The central pair (4244 and 4174) contained two women, one aged c.25–35 (who was 32–34 weeks pregnant) and the other over 55. The southwestern pair (4177 and 4104) contained a man aged c.35–45 and woman aged c.25–30; the grave just east to this pair (4512) contained a young man aged c.14–16. The two more distant graves (4002 to the west and 4573 to the east) contained a female aged over 13, and a young woman aged c.15–17.

The age of the burial in grave 4002 could not be more precisely determined as it had been exposed by machine stripping on the edge of the site and was badly disturbed; also the position in which the body had been laid could not be determined. Of the other burials, however, those in the six paired graves all had the heads at either the west (3) or the north-west (3); in nearby grave 4512 the head was at the north, while in the eastern grave it was at the east. All of these burials were crouched to some degree, with two of them (4177 and 4573) more tightly contracted; four had been laid on their right sides and four on their left.

The positions in which three of the burials had been laid were of particular note. In grave 4636, which was circular and just 0.9m in diameter, the woman’s skull was twisted round, facing to the rear. In grave 4244, too, the skull (of the pregnant woman) was not in its natural position, but bent far backward; moreover, her body had been placed with her knees tight against the western side of the grave leaving a large, apparently empty area behind her back. The woman in grave 4652 had been laid (crouched) on her right side, with her left arm on her pelvis and her right arm bent towards her head with the fingers outstretched and the thumb in her mouth.

In many of the graves, the burials had been partly or wholly covered in large flint nodules. In grave 4636 the backfill consisted entirely of tightly-packed nodules covering the skeleton; in others the nodules appear to have been arranged more selectively, as in grave 4244 where they were found on and around the bent-back skull (which was partly crushed by their weight).

None of the graves contained any grave goods. All of the burials, however, were radiocarbon dated, with eight of them returning dates within a relatively narrow range (at 95% confidence) – from 790–530 cal BC from graves 4636 (SUERC-41693, 2507±28 BP) and 4174 (SUERC-41683, 2506±28 BP) to 760–400 cal BC from graves 4177 (SUERC-41684, 2448±29 BP) and 4573 (SUERC-41691, 2439±28 BP). Only one burial, in grave 4512 fell outside this range at 520–380 cal BC (SUERC-41690, 2359±29 BP). It is notable that while some of the calibrated dates are identical, this is not the case with any of the paired graves, and the dates are statistically too close to indicate how the cemetery developed over time.

The graves are not the only evidence for Early Iron Age activity within the area immediately outside Little Woodbury (and its larger near-neighbour – Great Woodbury – which, largely unexcavated, remains less precisely dated within the Iron Age). In addition to there being a number of ditches visible in aerial photographs (some radiating out from the enclosures), the excavation revealed three clusters of intercutting pits (similar to pit clusters recorded within Little Woodbury) possibly for chalk extraction, as well as numerous post-holes – although none of these formed any clearly identifiable structures.

One of the graves (4104) had been disturbed by the pit digging, and it is possible that others had too – small quantities of redeposited human bone were recovered from some of the nearby pits. Nonetheless, while the positions of the two outlying graves suggest that there may well have been other graves beyond the excavation in similar proximity to the enclosures, it is quite possible that the whole of the central group of seven graves (which lay near the middle of the excavation) was recorded. Whatever the case, the singular composition of this central group, comprising five females (the two outliers were also female), three of them of mature age (from 40–50 to over 60), and only two males (one of them subadult), is of considerable interest.

We can be sure that the composition of this group was not representative of the community which occupied the Little Woodbury enclosure – although the only evidence from within the enclosure was a jaw of a woman in ‘early middle age’ recovered from a pit. Although the sample is small, there had clearly been some selection for burial at this location, but what the criteria for that selection may have been, and what significance can be attached to that and other aspects of the observed burial rites, remain to be established.

Andrew Powell, Wessex Archaeology
A new Mesolithic pit site and Beaker features at Little Dartmouth Farm in Devon

In 2008 building work began within what appeared from air photographs to be a large circular enclosure on the cliff top near to Dartmouth in Devon. An area 83m long by 11–15m wide was stripped revealing colluvium which was itself sealed by upcast topsoil and subsoil from previous earthmoving on the site. Beneath this a range of archaeological features was identified and excavated.

The largest of these features was a huge pit almost 3m across and 2m deep, which revealed a complex stratigraphic sequence suggesting numerous episodes of re-cutting. A radiocarbon date from near the base produced a result of 5640–5510 cal BC (SUERC-24615) while one of the upper layers yielded a date of 4950–4720 cal BC (SUERC-24617). Unlike the two other known Mesolithic pit sites in the UK at Stonehenge and Warren Fields, the example from Devon produced a small assemblage of worked flint and chert. There were no blades present and only a single ‘rod’ microlith and an elongated pebble tool to hint at the dating of the feature. Although much later in date, the Little Dartmouth Farm pit most closely resembles the outlying Stonehenge pit WA 9582, sharing a similar profile and evidence of re-cuts. It has been suggested that WA 9582 once supported a post which was subsequently removed. If the Little Dartmouth Farm pit had a similar function, its dimensions would suggest a very substantial post could have been accommodated.

At present it is unclear whether the pit is a single feature or part of an alignment as elsewhere. An east-west alignment would have been revealed within the excavation trench; however, a north-south alignment could have passed through the excavated area with only one pit revealed. Unfortunately, the area to the south of the site has been previously quarried away, while the area to the north has been covered by substantial amounts of spoil generated from the current development. A geophysical survey has been carried out to the north of the area of dumping and the results are awaited. While in the past the Stonehenge pits were dismissed as an aberration, the discovery of the Warren Fields pits with their astonishing sequence of dates cannot be ignored. The pit at Little Dartmouth is further confirmation of the existence of a Mesolithic with monuments.

In the middle of the site was a large midden-like deposit within a hollow which measured 10 x 10m in area and was up to 0.6m deep; this deposit extended beyond the edge of excavation to the north. It was composed of two distinct layers of compacted gravelly silt separated by a substantial dump of charcoal. Each of these layers produced broadly similar radiocarbon dates around 2040–1870 cal BC (SUERC-24608). Finds included Beaker sherds, a dense concentration of locally-sourced beach pebble flint-knapping waste and a number of finely-made chalk-derived flint
The Dancing Beggars

Clogs, windmills, cheese, tulips and Amsterdam: these are all things one thinks of when planning a trip to the Netherlands. However, the Prehistoric Society study tour to the Netherlands included none of these. Instead, this archaeological excursion brought us to barrow landscapes, megaliths, museums, excavations and a variety of fascinating sites. It combined two excursions: the Prehistoric Society study tour and a prehistory course for postgraduate students. So it was that we embarked

implements, notably several oblique arrowheads, one of which was unusually large. Unfortunately, the acidic nature of the local soils does not favour the preservation of faunal remains and none were recovered.

Other features included several small pits and gullies which produced more Beaker pottery and two pieces of stone, one of which resembled the rough-out for a small axe or chisel and the other a possible blank. Almost 30 years earlier, Mike Parker Pearson conducted surface collections and excavations at Churston, approximately 8km to the northeast of Little Dartmouth, on the opposite side of the Dart estuary. This produced 1108 pieces of worked stone and included 7 polished axes, one of which was made from an altered epidiorite. Although this rock may well have originated in Cornwall, another possible source was identified in the report: the greenstone outcrop at the Dancing Beggars, a coastal exposure 500m south of Little Dartmouth. In consequence, a rock sample taken from the Dancing Beggars was thin sectioned and compared to sections from the Little Dartmouth Farm roughout and blank. They appear to be the same rock with some textural differences due to the location of the rock within the deposit. Whether the original piece from Churston is indeed from the Dancing Beggars is a question that falls outside the remit of the current work.

Discussion of the nature and location of stone axe production in the Southwest has been limited by the fact that no actual production sites have ever been identified; Group V axes, once considered on petrological grounds to have been sourced from Cornwall, are now thought to have originated in Perthshire. While the evidence from Little Dartmouth Farm and the Dancing Beggars is slender and circumstantial, it could indicate that greenstone axe production in the Southwest involved a much more diverse and dispersed range of sources than previously thought.

Martin Tingle

Prehistoric Society study tour of the Netherlands
on a five-day trip through the Netherlands with 15 Society members, 13 students, 2 Leiden professors (Harry Fokkens and Corrie Bakels) and 1 coach driver.

The first day – the 26th of May – was spent in Leiden where we first had to navigate our way through the Leiden Marathon to the National Museum of Antiquities. Here, Dr Luc Amkreutz, the curator of the prehistoric department, guided us around the exhibition on Dutch prehistory. Then, after a short sightseeing walk through Leiden, we visited the Faculty of Archaeology. We concluded the day with an introductory borrel and an excellent Indonesian rice table.

On day two, we left Leiden behind to officially start the tour at a Merovingian-Karolingian excavation in Oegstgeest. Here, the first year archaeology undergraduates of Leiden University follow a two-week course in excavating – their first experience with field archaeology. From there, we left for the Iron Age wetlands of the North, stopping for lunch on the Afsluitdijk (a large enclosure dam that separates two seas). We then visited several terps (man-made earthen hills), of which Hogebiertum was the most picturesque, with a small church on top, flowers in bloom and Frisian horses playing in the fields at its foot. Its (for Dutch standards) enormous height of 8.8m above sea level was impressive. At the end of the long day we arrived in Groningen, where we spent two nights.

The following day dawned bright and sunny again, which made for a beautiful walk through the barrow landscape, but this time those of the Epe Vaassen landscape, known for its beautiful and diverse scenery. Dr Quentin Bourgeois gave us a guided tour of the area, telling us about his research on the linearity of these barrows, and showed us the extensive Celtic field systems in LIDAR images and in the landscape. He then shocked the group by describing the damage caused to these prehistoric sites by ongoing heath management. In the afternoon, we were met with drizzling rain, so we discussed the changing of the Pleistocene to the Holocene Rhine-Meuse delta over a coffee on the edge of the Rhine with a view over the Grebbeberg. We then travelled southeast to the city of Nijmegen, where the Prehistoric Society members stayed for the next two nights. The students, however, slept in renovated pig stables at a farm nearby, where they spent the evenings milking cows and playing football.

The next day began in Nijmegen, where Dr Harry van Enckevort gave a short lecture on the Roman sites in the city and showed us the Roman fort on the Kops Plateau. This was followed by a guided tour around the Valkhof museum by the curator, Dr Louis Swinkels. In the afternoon, we moved from the Roman Age to the Hallstatt period. Under the guidance of Richard Jansen, we visited the Zevenbergen Hallstatt barrows and one of the Netherlands’ most famous archaeological finds, the chieftain’s grave at Oss. In the town hall of Oss, Richard Jansen and Harry Fokkens provided us with a cup of coffee and lectures on these monuments and the rich archaeology of Oss. We finished the day with a much-deserved borrel.

On the final day of the excursion, we left the Nijmegen area for the southernmost province of the Netherlands, Limburg. Here we were welcomed at the excavation of Well-Aaijen, a Mesolithic site, where we were all impressed by the industrial scale of commercial archaeological investigation. The last excursion point was the Eindhoven Museum, an open-air park with reconstructions from prehistory to the Middle Ages. Enjoying the afternoon sun, we walked around the park seeing archaeology come to life, played prehistoric games and admired the enormous, modified ‘prehistoric’ pigs. Most of us tasted a locally-brewed biological refreshment served by a medieval waitress. We then concluded the tour in Leiden with a typical Dutch treat: pancakes. This was a lovely end to the excursion, where students and Society members chatted and exchanged contact details.

The combination of postgraduate students and Prehistoric Society members on the excursion turned out to be a great success, leading to many lively conversations. The students gained new insights into their own country, learned a lot about British archaeology and discovered the joys of cow farming. The Prehistoric Society members enjoyed the excursion as much as the students. They got a clear image of how archaeology is practised in the Netherlands, from municipal archaeology to commercial excavations. Many were surprised to learn about the division between the North and South, visible in the archaeology of the country. Additionally, they learned that the Netherlands, apart from the ‘enormous’ terps and barrows, is indeed as flat as everyone says it is.

Jordy Aal, Kiki de Bondt, Nathalie Ø. Brugaard, Tamara de Reus & Rik Semeijn
Meetings Programme 2013–2014

Further details, including times, prices, contact information and booking forms, will be posted on the Society website as soon as they become available.

<table>
<thead>
<tr>
<th>Date</th>
<th>Venue</th>
<th>Details</th>
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<tr>
<td>5–7 Sept 2013</td>
<td>Conference session</td>
<td>‘When the potters make the story: what can pottery tell us about the people who made and used it?’ Jointly organised by the Prehistoric Society and the Société Préhistorique Française. For details, see: <a href="http://www.eaa2013.cz/programme/">http://www.eaa2013.cz/programme/</a></td>
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<td></td>
<td>19th European Association of Archaeologists Conference, Pilsen, Czech Republic</td>
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<tr>
<td>8 Sept 2013</td>
<td>Prehistoric Society open day: excavations at Ham Hill An exclusive tour for Prehistoric Society members of the new excavations at Ham Hill, Somerset, by Prof. Niall Sharples (Cardiff University) and Chris Evans (Cambridge Archaeological Unit) at the largest Iron Age hillfort in Britain.</td>
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<tr>
<td>11am</td>
<td>Ham Hill, Somerset</td>
<td>Directions to the excavations: Ham Hill is easily accessed from the A303 and you can get directions via Google Maps. The post code is TA14 4QL for those of you with SatNav capability. From the A303 take the exit marked Stoke-sub-Hamdon, go through the village to the T-junction. Turn left and immediately right signposted ‘Ham Hill’. Follow the road up the hill past the ice cream van and through the woods; after you pass the quarry and the dog kennels on the right, there is an entrance to the right which leads into the dig camp site where suitable parking is available. If you are planning to attend the open day please let the society know by emailing: <a href="mailto:prehistoric@ucl.ac.uk">prehistoric@ucl.ac.uk</a>. Places are limited so if you would like to attend please let us know by 31st August.</td>
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<tr>
<td>5 Oct 2013</td>
<td>Lecture</td>
<td>‘Do henges exist? A skeptical view’ by Dr Alex Gibson (University of Bradford)</td>
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<tr>
<td>2.30pm</td>
<td>Venue: Castle Museum, Norwich</td>
<td>Joint Prehistoric Society/Norfolk &amp; Norwich Archaeological Society lecture</td>
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<tr>
<td>16 Oct 2013</td>
<td>Lecture</td>
<td>The 12th Sara Champion Memorial Lecture: ‘Making pots matter: social practice and early first millennium BC ceramics in East Anglia’ by Dr Matt Brudenell (Cambridge Archaeological Unit)</td>
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<tr>
<td>5pm</td>
<td>Venue: Society of Antiquaries, Burlington House, Piccadilly, London</td>
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<tr>
<td>8 Jan 2014</td>
<td>Lecture</td>
<td>‘Artefacts and antiquarians in the Axe Valley: searching for early humans at Broom’ by Dr Rob Hosfield and Dr Chris Green (University of Reading)</td>
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<tr>
<td>7.30pm</td>
<td>Venue: County Hall, Exeter</td>
<td>Joint Prehistoric Society/Devon Archaeology Society lecture</td>
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<td>1 March 2014</td>
<td>Day conference</td>
<td>‘People in prehistory: houses and households’ The second in our series of ‘People in prehistory’ day conferences, focusing on the nature of households in prehistory. Booking details and full programme will be on our website in due course.</td>
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<td></td>
<td>Venue: Society of Antiquaries, Burlington House, Piccadilly, London</td>
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<tr>
<td>19 March 2014</td>
<td>Lecture</td>
<td>‘Morgawr: building a Bronze Age-type sewn-plank boat and exploring prehistoric seafaring through experimental archaeology’ by Prof. Robert Van de Noort (University of Exeter)</td>
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<tr>
<td>7.30 pm</td>
<td>Venue: Bingham Hall, King Street, Cirencester</td>
<td>Joint Prehistoric Society/Cotswold Archaeology Society lecture</td>
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<td>4–6 April 2014</td>
<td>Yorkshire</td>
<td>Student field trip to the Yorkshire Dales led by Robert White, Miles Johnson &amp; Alex Gibson</td>
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<td>Sites to include: the Yarnbury henge monument and the Lea Green enclosures; Victoria and Jubilee caves and hut circle settlement; Maiden Castle and the Swaledale co-axial field systems. Further details on how to attend will be on our website.</td>
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The Prehistoric Society invites submissions for the 2013 Undergraduate Dissertation Prize. The award celebrates the dissertation that has made the greatest contribution to the study of prehistory in any part of the world. The prize is open to students from any university in Britain and Ireland.

Each department is invited to submit one dissertation by a candidate who completed her or his degree during the 2012/3 academic year. The judges will assess entries on the basis of the quality of work, the originality of the approach and the degree to which the research advances our understanding of prehistory.

The winner will receive three years’ free membership of the Society, the choice of one of the Society’s in-print monographs and £100. Three runners-up will be awarded a current copy of the Proceedings. An abridged version of the successful dissertation will be considered for publication in the Society’s Proceedings. The prize will be presented prior to the Sara Champion lecture on the 16th of October.

This prestigious prize represents an excellent opportunity for promising young scholars to have their work publicly recognised in the magnificent Burlington House. Entries for the current academic year are to be sent, by the host department and in electronic form, to Niall Sharples, Dept. of Archaeology, SHARE, Humanities Building, Colum Road, Cardiff, CF10 3EU, by Friday 26th July. Entries can only be accepted if accompanied by details of the email address, postal address and contact phone number both of the candidates and of their supervisors.

**Prehistoric Society Research Papers – Volume 5 reprinted**

*Image, Memory and Monumentality*, our festschrift for Richard Bradley presented to him at last year’s Europa Conference.

Both books are selling well, but we are pleased to announce that we are arranging with Oxbow Books for our first reprint following the sell-out of *Image, Memory and Monumentality*. We are in discussion with Oxbow as this edition of *PAST* goes to press, but we are hoping to reprint the volume in paperback at a price of around £29.95.

The series seems to have rapidly bedded down and is fast becoming a series in which authors wish to publish their research and projects. The demand has become quite strong so we are reinforcing our remit not to publish ‘sites’ per se, no matter how appealing and significant they are, but to continue to address themes or landscapes (in which sites can clearly feature).

Keep an eye on our website for new developments, and the next edition of *PAST* will have more details of the reprint and other volumes.

*Mike Allen, Series Edit*
Students, friends and colleagues were greatly saddened by the death of Peter Drewett on 1 April 2013. Peter monitored and directed the excavation of some of the UK’s most important prehistoric and historic monuments. Through the 1960s and early 1970s, he was an Assistant Inspector of Ancient Monuments. He was an elected, founder member of the Institute of Field Archaeologists and he set up and directed the Sussex Archaeological Field Unit from 1973–91. Peter was Head of the Department of Prehistory at the UCL Institute of Archaeology from 1991–93 and his leadership and tea parties are fondly remembered. He established the Institute’s experimental archaeology field course for new undergraduate students which continues to this day. In 2004, he took up the post of Professor of Archaeology at the University of Sussex.

Concurrently, Peter established collaborations outside the UK. He maintained long-term associations with archaeology departments at Longwood University, Virginia, and the University of Tomar, Portugal. In the 1980s and 1990s, Peter played a seminal role in the development of the Hong Kong Government’s archaeological service. He likewise steered the governments of the British Virgin Islands, Cayman Islands and Barbados on heritage issues and undertook and published major excavations on their behalf. Along with his wife Lys, he quickly made friendships in the places where he undertook secondments and fieldwork. Within his Sussex home community, he involved local volunteers in his field programmes, gave numerous public lectures and was Chair and President of the Sussex Archaeological Society.

His academic legacy includes books on UK, Caribbean and Hong Kong archaeology. His classic excavations and articles in the Proceedings of the Prehistoric Society, including the Neolithic causewayed enclosure of Offham, and the Bronze Age site of Black Patch, remain the backbone of interpretations of later British Prehistory. His bestseller academic book entitled Field Archaeology has multiple reprints and his professional legacy in training numerous UK and overseas field archaeologists is enormous.

Peter was a kind and astute mentor to numerous students and budding academics. He never became old or seemed old. An email recently received from a former student provides an appropriate summation of Peter: ‘I fondly remember him giving me the much-needed boot up the backside in my first year that really kick-started my career’.

Sue Hamilton

Understanding the orientations of Neolithic cup and ring radials and penannular motifs in northern Northumberland

British rock art studies usually focus on either the meaning of individual motifs or the landscape setting of decorated panels. Only rarely are both considered together and, as a consequence, the rich and nuanced relationship between the compositions of panels and surrounding spaces and places is left largely unexplored. However, these areas of research need not be mutually exclusive, as this project – funded by a grant from the Prehistoric Society – attempts to demonstrate by focusing on the poorly-studied penannular motifs, cup-and-ring radial lines, and grooves which adorn many panels. Unlike most rock art, these motifs point in particular directions, yet the meaning of these orientations and their relationships to the wider landscape have never been considered. Our work attempted to address this issue by recording alignments at fourteen rock art sites around the Milfield Basin in northern Northumberland and then exploring what they may have pointed towards. The results suggest that orientations were both deliberate and meaningful.

There is considerable variation in the orientation of these motifs. Some sites show a strong preference for certain directions, but as a group they occur around the compass, albeit with 64% aligned on its eastern half. A more obvious pattern is apparent when it is asked if they pointed towards particular places in the landscape, with 74% aligned on distinctive landscape features, other rock art, or what are possibly contemporary monuments. This is perhaps hardly...
surprising in the topographically varied and culturally-rich landscape of northern Northumberland, yet when individual sites are considered, the correlations appear anything but fortuitous. For example, the site of Goatscrag, which enjoys extensive views in all but a northerly direction, has ten horseshoe penannulars, seven of which are orientated to the south and southwest looking towards the Milfield Basin. Four of these point directly at the recorded enclosures (or possible henges) at Alkeld, Ewart Park, Coupland and Milfield South, even though these sites were invisible to the naked eye. This could suggest that places of importance, where people gathered together at certain times of the year, were being celebrated, commemorated or venerated through the art.

By contrast, the carvings at the Ringses are largely orientated between the north and the east, with all but one of the thirteen alignments pointing towards the prominent natural features of St Cuthbert’s Cave, the carved rock outcrops at Hare Law Crags, Gled Law and Chatton, and other rocky crags, such as at Cockenheugh and Collar Heugh Crags, flanking the eastern edge of the Till valley. The sandstone rocks at Cockenheugh have eroded into strange shapes, and from certain angles they appear to have anthropomorphic qualities, characteristics which are likely to have been highly significant in the Neolithic when animistic belief systems may have been common. If this suggests a concern with natural places and outcrops, then two of the three outliers to this pattern, orientated towards the southeast and south, are aligned on less conspicuous, but carved, surfaces. A final example – the large and richly decorated ‘whaleback’ rock of Roughting Linn – highlights how alignments could also reference nearby features. Its many linear carvings are largely orientated between the north and southeast towards an adjacent sloping hillside, conspicuously avoiding a more distant hill to the south.

The study suggests that the orientations of radials and penannular motifs may have often referenced places and spaces which their carvers could have regarded as important, thereby playing an active part in how people experienced and symbolically perceived their landscape. Irrespective of the extent to which these spaces and places were actually visible from the art – it seems likely that many would have been blocked by tree cover – they helped create narratives which connected people, and their histories, to the land and its spirits.

Mark Lawson and Jan Harding

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**Updating the *ruina montium* (wrecking of mountains): an Iron Age gold mining system**

In 25 BC, Rome decided to undertake a campaign for the conquest and colonization of Asturias, in the northeastern part of the Iberian Peninsula. Although the official excuse for this intervention by the Roman army was to protect the peoples to the south of this region from frequent attacks by the Asturs, contemporary historians agree that the main reason for the Roman army’s intervention was the presence of large gold reserves in the region. After the conquest – the campaign having lasted with various interruptions until the beginning of the first century AD – Rome formed a policy for industrial gold exploitation. A massive, complex system of hydraulic engineering (alongside roads) would be created, bringing about growth in many local settlements.

In 77 AD, the historian Pliny the Elder (*Natural History* 33, 21), who served as procurator in Hispania, recorded one of the various mining techniques used in the mountains. Employing the *ruina montium* mining practice, miners dug extensive water channels sourced from natural water reserves or artificial damming. These channels formed tunnels entering the hill to be mined, and when torrents of water were released the hydraulic pressure broke up huge chunks of earth and rock. The gold was extracted when the material was later washed in streams. This engineering practice was also employed in defensive systems in many of the Asturian hillforts in the far western area. Initially dug by hand into earth and rock, the ditches surrounding these sites were widened by the diversion of nearby streams towards them through a series of gullies, thus creating sustained water erosion to aid in the enlarging of these features.

The account written by Pliny, the immensity of some mining sites which clearly belong to the Asturian Roman period, and the questionable academic premise that all complex or large-scale undertakings must be the result of Mediterranean influence, are all factors which have led to the current belief that ancient mining was only carried out by the Romans. This traditional view has been maintained in the academic world.
Aerial view of the Ceruñales hill fort showing the mining faces, one of which was used for excavating a ditch

We can see defensive structures created by channelling and mining techniques at the Asturian hillfort in San Martín del Valledor. The large number of hillforts using this kind of defensive system and the re-dating of the Ceruñales hillfort leads us to suggest that the Asturians were using these techniques before the arrival of the Romans.

because there has not been any archaeological exploration of the hundreds of documented mining tunnels in the Asturian mountains. A study in 2012 of several clear examples of Iron Age Asturian hillforts with defensive systems excavated using the *ruina montium* technique leads us to question the traditional attribution of this engineering technique to the Roman period. From the time of the Early Iron Age, the defensive systems at Asturian hillforts demonstrate that superior engineering techniques were used, as seen in our excavations at Cogollina in 2004 (see *Origini. Preistoria e Protoistoria delle Civiltà Antiche* 33, 2011), where ditches of over 50m in length and varying depth were dug into the rock, modular wall systems were installed, and rainwater was diverted away from residential areas.

Although in this outstanding example no mining system was used for excavation, at another Asturian site, the hillfort at Ceruñales in Noceda (clearly of Iron Age origin), there existed a network of gullies through which water was diverted towards the area where the ditches were dug using the *ruina montium* practice. We have recently carried out a study at the Ceruñales hillfort, located in proximity to the major gold mines in Hispania, and around which a great quantity of remains of hydraulic works can be seen. Hydraulic practices were not only employed in exposing small gold sluicing surfaces, but also in excavating defensive systems for the settlement. In the course of investigations carried out by Alvarez Gonzalez (published in *Complutum* 4, 1993), archaeological researchers found several pieces of handmade pottery, as well as part of a cabin. Although no Roman artefacts were found, except for some local ceramic pieces, the presence of a trench excavated using *ruina montium* mining techniques led them to associate the hillfort, erroneously in our opinion, with the Roman period, according to the traditionally-accepted cultural premise.

In our view, the great defensive engineering works at hillforts where activity has been clearly dated to the latter part of the Early Iron Age, as in the case of material at the Ceruñales hillfort, demonstrate that the mining technique known as *ruina montium* was already practised before the arrival of the Romans, although it reached its maximum potential with the help of professional engineers from their army. Despite the fact that the sites are undated, the large number of hillforts using the technique supports our theory bearing in mind that the Roman presence brought about a decline in the number of fortified settlements. Archaeological findings once again demonstrate the advanced stage of development of an Iron Age people of the Atlantic region, the Astures, despite the traditional view of ‘savagery’ firstly held by Roman historians and subsequently until the present time by a large proportion of the recognized academic world.

Alfonso Fanjul Peraza

Southeast Kernow Archaeological Survey (SKAS): 2012 Geophysical surveys at Mountain Barrows, Pelynt, Cornwall

Despite many generations of archaeological fieldwork in Britain’s southwestern peninsula and the central role played by Cornwall in later prehistoric exchange networks, the southeastern part of the county remains largely *terra incognita*. There is little history of antiquarian research, particularly on prehistoric monuments, and the antiquarian reports of activity in the area are incomplete. Over the next several years, fieldwork carried out for the SKAS project will help us to develop a better understanding of the prehistoric landscape of this region which links metal-rich uplands such as Bodmin Moor to the English Channel.

Among the first targets for study was a barrow cemetery known as Mountain Barrows, near the village of Pelynt.
This site was known to consist of 8–12 Bronze Age burial mounds, mostly identified through crop marks and from nineteenth century Ordnance Survey records. Three remain visible as medium to quite impressively large mounds. At least two of the barrows were partially excavated – although without expert supervision or knowledge – in the 1830s/40s and yielded typical Early Bronze Age finds including flint tools, a stone battle axe, a bronze dagger and cremated human remains (soon to be published by A. Jones, Cornwall HER). Another putative find from the area – although one with a much more dubious provenience – is a bronze sword or dagger fragment which is purportedly of Aegean origin and dates to the Middle Bronze Age. The field in which these barrows are located is scheduled, and no archaeological work has been carried out on them since the nineteenth century investigations.

In 2012, as part of the initial season of fieldwork, we approached Mr Daniel Philp who owns and farms the land on which the Mountain Barrows are located. He granted permission for non-invasive fieldwork on the site. With the collaboration of the Saltash Heritage Group and Cornwall Archaeological Society we have now produced the first ever magnetometer survey of the Mountain Barrows site. We targeted the locations of visible barrows and the presumed location of cropmarks in the 2012 season; in 2013, we will complete a survey of the remaining areas.

In the area currently surveyed, six incontrovertible banked and ditched barrows are present; several other circular features, some of which may also be barrows, are also visible. The southernmost barrow – marked on the 1882 Ordnance survey as the largest, though mostly invisible now – appears to be enclosed by a double ditch, but this apparent feature may actually reflect the fill of the ditch giving an ambiguous magnetic signal (L. Dodd, pers. comm.). Also of interest is the size of the large twinned barrows in the east of the field. These are the two most prominent surface features, although the southwestern barrow is considerably larger above ground, measuring between 25 and 30m in diameter and rising c.1.5m above ground level. The magnetometry reveals that, in fact, the two barrows are nearly identical in extent and their ditches appear to abut each other.

Of the other circular features, the northernmost may be another barrow, although the presence of a ditch is unclear as the magnetic response has been affected by the depth of colluvium. Its position matches that of one of the barrows recorded on the nineteenth century Ordnance Survey maps. Immediately to the west is another circular feature 5–6m in diameter. There is no record of a barrow in this location, and its smaller size might indicate it is a different sort of feature. Of the barrows recorded by the Ordnance Survey, seven match quite closely those visible in the magnetometry, one (to the west of the large twin barrows) appears not to be present, and two are in areas of the field not yet surveyed.
Additionally, some internal features – small pits or postholes – appear to be visible within the twin barrows and the southernmost barrow.

A number of other features are visible in the survey area. The majority of these are linear features, most of which align with historically or currently visible field boundaries. Several of these linear features appear to abut the barrows which seem to have been used as boundary markers. Three linear features in particular are worth noting. In the southwest, two parallel features which do not appear to have uniform fills lead directly to one of the central barrows; their nature or age are unclear. The second linear feature worth noting is the very strongly-signaled east-west ditch leading from one of the twin barrows to the modern hedge line. It is not yet known whether this ditch continues on the other side of the hedge, but the fact that it meets that hedge at a right angle suggests it is most likely post-Medieval. Finally, the strong linear feature in the southwest of the surveyed area aligns with a short hedgerow still standing in the neighbouring field, appears to curve between the western cluster of barrows and continues in a more east-west orientation through the centre of the Mountain Barrows field; this may be a disused path leading to the abandoned quarries nearby (L. Dodd, pers. comm.).

We had hoped that some evidence of the nineteenth century excavation would be visible in the survey results. The records are contradictory about which barrows were investigated, some saying the southernmost, some saying the largest – and none indicating which barrow yielded which burial assemblage. While the evidence is not incontrovertible, it is possible that disruptions to the ditch on the southwestern twinned barrow might reflect an antiquarian trench. This barrow is currently the most prominent in the field, and it is logical that antiquarian interest would be drawn to it. A narrow linear or rectangular feature is also visible in the interior of the apparently unditched, northern barrow, but this may be an artefact of the survey.

The Mountain Barrows site, one of the largest clusters of barrows in the region, was clearly an important site in prehistoric southeast Cornwall. The recovery of an apparently Aegean dagger or sword hilt from the area hints at an even wider significance for the region. In 2013 and subsequent years, geophysical survey, fieldwalking and small-scale excavation will be carried out on a number of other presumed later prehistoric sites in the region to allow us to start filling in the map of the lowlands linking Bodmin and the English Channel and to determine the changing significance of this region to Cornish, British and European prehistory.

Acknowledgements
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Another dagger with a rivet-studded hilt: Racton Park Farm, West Sussex

Until recently only four examples of Early Bronze Age daggers with intensely rivet-studded hilts were known – Garton Slack, East Yorkshire; Eaton & Alsop, Derbyshire; Leicester, Leicestershire; and Milton, Wiltshire. This number was increased by the excavation of an example at Ferry Fryston, North Yorkshire, in 2004 – it lay in the hands of a 40-50 year old man tightly crouched on his left side – and yet again by the recognition that the mass of rivets and flat bronze fragments found over 200 years ago to the south of the main burial in Bush Barrow, Wiltshire, are best interpreted as the remains of a similarly embellished dagger. We can now add a seventh and possibly an eighth to the tally.

The Racton Park Farm example highlighted here was also associated with a crouched burial. Although found in 1989 and published promptly in the Annual Report of the Chichester District Archaeology Unit, this important dagger burial has apparently gone unnoticed by Bronze Age scholars. It came to the attention of the author through a chance remark from James Kenny late in 2012. This prompted an initial visit to Chichester Museum’s store (Fishbourne Roman Palace), where curator Anooshka Rawden assisted us in viewing the object and associated skeletal remains.

The dagger blade itself, along with five rivets, was recovered by a metal-detectorist. Its potential significance being appreciated, James Kenny conducted a rapid follow-up excavation which revealed a crouched burial at the findspot. 21 further copper or alloy rivets were recovered from

Photo: James Kenny, Archaeology Officer, Chichester District Council
spoil from the hole dug by the metal-detectorist. This was directly over the skeleton’s hand and in front of the upper chest. Excluding the three rivets attaching the blade to the hilt, the total of 23 hilt-studding rivets compares well with the above-cited parallels, which have between 17 and 39 ‘superfluous’ rivets.

The triangular dagger blade is 176mm long and is totally flat apart from bevels at the edges which are up to 4.5mm broad. Three securing rivets – one through the tang and one through each of the pronounced shoulders at the head of the blade – are distributed around a broad omega-shaped hilt-line marking the bottom end of the decayed organic hilt-plates. The distinctive butt shape, with angular shoulders flanking a markedly trapezoidal tang, is only occasionally matched amongst early flat daggers and has recently been used to define a type named after the Ferry Fryston find and found in small numbers in Britain and Ireland. The two associations with that type are crucial in showing the emergence of rivet-studding at the transition between copper and bronze metalworking, around the 22nd century BC. A radiocarbon date on the Ferry Fryston skeleton is in accord with this dating. Other daggers with rivet-studded hilts may be a little later, but still towards the very beginning of the full Early Bronze Age, so the technique-cum-style may have been relatively short-lived. The possible eighth rivet-studded dagger mentioned above, but not hitherto recognised as such, is from Ballyenahan, Co Cork – and would be the first known from Ireland. This small group of early daggers is testimony to the drive for craftworkers to find novel ways of making these important status items more ornate.

Further detailed studies and analyses of the Racton Park Farm dagger and burial are planned. It is hoped to obtain an independent date and to ascertain whether the various metal components are of copper or bronze. Full study of the skeletal remains is also vital – for example, no age or sex has yet been estimated and it will be important to see how it compares with established patterns amongst early dagger burials in this country.

Stuart Needham

Quest for Carwynnen Quoit, Cornwall

The footprint of a megalithic monument has been revealed in Cornwall for the first time ever during excavations at Carwynnen Quoit in 2012. Carwynnen Quoit, which lies within the long shadow of the Neolithic hilltop settlement of Carn Brea, 6km southwest of Camborne, is one of Cornwall’s lesser known Neolithic monuments. A Cornish quoit, or cromlech, Carwynnen is considered to be one example of the oldest surviving monument type in southwest Britain. The site has an intriguing history with an early mention by the Welsh antiquarian Edward Lhuyd in 1700, and is depicted in a sketch by William Borlase in 1769 which showed a massive capstone supported by three fine tabular uprights forming an open chamber. The monument collapsed in the mid-nineteenth century and was then restored by the wealthy Pendarves family on whose estate it lay. Over 60 years ago, the monument collapsed again and until just last year the stones lay as a neglected pile in a field. In PAST 62 (2009), we reported that plans to restore the monument were in hand after an educational charity, the Sustainable Trust, bought the site with the help of the Heritage Lottery Fund. In 2012, a community archaeology project began work towards its restoration. Beginning with an evaluation in July, when numerous test pits were excavated around the site to assess the potential for buried archaeology, a Big Dig followed in September.

The first challenge was to unpick the stone pile. This was successfully achieved on 10th September with a large crane.

The entire operation, watched by a transfixed crowd of over 40 supporters, was expertly executed. Each stone (uniquely numbered and surveyed beforehand) was systematically placed downslope and removed in a sequence to facilitate further study. Each of the principal stones was weighed while momentarily suspended in flight: the three uprights averaged under 2 tonnes, while the massive mushroom-shaped capstone was a hefty 9.8 tonnes! A laser scan survey of the stones is currently taking place.

The Big Dig spanned 3 weeks from mid-September to early October 2012. A large excavation trench was opened up...
to investigate the location of the stone pile as well as its immediate setting (the earlier test pitting exercise discovered prehistoric flint tools and pottery across the entire field). The major discovery was a remarkable stone pavement composed of rounded pieces of granite and quartz which covered an area of approximately 5.5 m² sealed beneath topsoil. That this pavement survived at all was due to the fact that when the monument collapsed in the 1960s, the stones had fallen right on top of the area where they had once stood: the stone heap had therefore protected the ground beneath from later plough damage. The intact stone pavement comprises two elements: a narrow compacted strip of small stones (forming a hard-standing surface) arranged in a doughnut-like circuit which wrapped around, and contained, a pavement of larger stones. Approximately three-quarters of this circuit survived (its northern, western and southern sides); the eastern side had been removed during the first restoration of the monument in the nineteenth century. Both surfaces would have been protected by the suspended capstone when it was in place, but intriguingly, the fine narrow strip of the pavement extended well beyond the shelter of the capstone at the ‘front’ (northwest) of the monument.

Socket-holes for the three uprights were identified, two of which were fully investigated. One (for stone 2) was heavily disturbed while the third, for stone 3 (at the back of the monument), was found with stone lining in situ. Fills at the base of this massive hole (1.5m in diameter and 0.70m deep) produced no artefacts although grain and young wood charcoal were recovered. Submitted for scientific dating in early 2013, the radiocarbon dates have, however, calibrated to the modern period and so the samples must therefore have entered the socket-hole during the nineteenth-century restoration. Large numbers of flint artefacts (over 100 burnt and snapped tools) alongside 20 pieces of early Neolithic pottery and a unique greenstone pestle were found distributed across the chamber floor showing that despite clear historic disturbance, preservation was generally high. A concentration of finds was identified at the rear of the chamber up against where the two uprights (stones 3 and 4) once stood. There is considerable scope for additional investigation where further primary deposits may still lie undisturbed at the rear of the chamber and the socket-hole for stone 4 awaits full investigation. On the edges of the pavement a few sherds of Grooved Ware and Bronze Age pottery were found revealing an active ongoing use of the monument throughout prehistory. Footings for stone walls – perhaps evidence for later (prehistoric) fields – were found at the back of the site and these also require further investigation. These discoveries advance significant insights into the study of Cornish megaliths, the project at Carwynnen being the first of its kind.

The project is a partnership between the Sustainable Trust and Historic Environment, Cornwall Council, which has gained great support from the local community and supporters far and wide. Over 40 volunteers continue to work with great enthusiasm to help uncover the mysteries of this site. Work to date has been funded by the Heritage Lottery Fund, Cornwall Archaeological Society, Cornwall Heritage Trust, Tanner Trust, John Paul Getty Jr Trust and Caldwell Bequest. Fund raising for further archaeological investigations, including excavation, are in hand. If successful, we hope that the restoration of the monument will take place in spring 2014. Watch this space!

For more details on the project, contact Jacky Nowakowski, Historic Environment, Cornwall Council (jnowakowski@cornwall.gov.uk), and Pip Richards, the Sustainable Trust (pip.sustrust@gmail.com). For regular updates, see www.giantsquoit.org and https://www.facebook.com/CarwynnenQuoit.

Jacky Nowakowski