Jarlshof: new stable isotope analysis provides novel perspectives on stock-keeping practices of the Neolithic and Bronze Age communities of the Shetland Isles

The extraordinary site of Jarlshof, situated on the southern tip of the Shetland Isles, was occupied episodically from the Early Neolithic through to the 17th century AD. It has been subjected to a number of excavations since 1897, when severe storms exposed part of the site and the landowner, John Bruce, started to explore the remains. Several excavations took place during the 1930s, including by V. Gordon Childe in 1937 and Miss B. Laidler in 1938–9. Both dug through midden and blown sand deposits down to Early Neolithic levels. Later, from 1949 to 1952, John Hamilton’s excavations uncovered Iron Age houses (including a wheelhouse and a broch) as well as a series of Viking and Later Norse longhouses. The most recent excavations were in 2004, when Steve Dockrill and Julie Bond (University of Bradford) examined the sequence of middens uncovered by Childe to clarify details of soil management strategies in prehistoric Shetland.

A new project, led by Roz Gillis and hosted by Cheryl Makarewicz at the ASIL lab, Christian-Albrechts-Universität zu Kiel (Germany), has turned its attention to the faunal remains from Jarlshof. It examines the impact of farming, specifically stock herding, on European forests and the

Aerial view of Jarlshof. Late Bronze Age and Early Iron Age settlement in the top left corner, late medieval Laird’s House in the middle (upstanding masonry), Iron Age broch, wheelhouse and other structures to the right of it and the Viking and later Norse settlement towards the front. Crown copyright: Historic Environment Scotland
adaptation of foddering practices to different environments. Shetland, effectively treeless for much of its past, offered a point of comparison with other, more forested parts of Europe. Part of the work involved obtaining new radiocarbon dates, and accordingly a cattle tooth root from Childe’s Midden II and a cattle femur from the Late Bronze Age settlement were radiocarbon dated at the Bristol Radiocarbon Accelerator Mass Spectrometer laboratory (BRAMS). The first sample produced a Neolithic date of 4655±26 BP (BRAMS-2601, 3517–3366 cal BC at 95.4% probability). This is, however, earlier than a date of 4496±29 BP (SUERC-43683, 3350–3090 cal BC at 95.4%) obtained in 2012 for National Museums Scotland from a bone point (NMS X.HSA 3006) from the stratigraphically lower Midden III, which is separated from Midden II by a layer of blown sand. Clearly, more dating of Middens II and III is required to clarify the sequence and the integrity of deposits. The other newly-obtained date – 2841±25 BP (BRAMS-2600, 1086–919 cal BC at 95.4%) – is closely comparable to that obtained in 2012 for another bone point (NMS X.HSA 3022) from the upper level (M.IIA) of Midden II (2830±27 BP, SUERC-43684, 1070–900 cal BC at 95.4%). This confirms Curle’s and Hamilton’s view that Midden IIA was still accumulating when the Bronze Age settlement was established.

At Jarlshof, there is good bone preservation, unlike many other areas of Scotland where soils are generally acidic. Although many animal bones were recovered, they were not seen as important at the time and only a selection was kept. In the last thirty years, considerable advances in archaeozoological and biomolecular approaches have elevated the importance of animal remains in helping us understand past human societies. Stable isotope analysis of bone and
teeth can provide information about livestock management and diets as well as about the landscape surrounding a settlement during its occupation. While bone material recovered from Norse contexts at Jarlshof has been subjected to stable isotopic analysis by Jennifer Jones (University of Aberdeen) and Jacqui Mulville (Cardiff University), no analysis had been carried out on the remains from the Neolithic and Bronze Age. Samples from these phases were accordingly taken of cattle and sheep bone and teeth for bulk stable isotopic ($^{18}$O, $^{13}$C and $^{15}$N) analysis.

Cattle and sheep teeth are excellent isotopic records. The values of carbon and nitrogen isotopes from collagen extracted from the sheep and cattle bones are what one would expect for animals pastured on grasslands and are comparable with previous results from sites in the Northern Isles. The carbon data can be used to interpret what type of fodder was consumed by the animal during the development of the tooth, while the oxygen data can be used to reconstruct the seasonality of fodder sources. The third molars from five cattle individuals were sampled incrementally, providing a sequence of isotopic values during the formation of tooth enamel, i.e. during the second year of the animals’ lives. Sheep second and third molars were also selected, providing information for the first two years of life. Overall, the sheep teeth indicate that animals were born at the same time of the year and consumed a diet that varied little seasonally. The carbon values from cattle were higher than those for the sheep, suggesting a different fodder source. Seaweed and seagrasses have higher stable carbon isotope values than terrestrial grasses and had previously been identified as summer food sources for Neolithic sheep from Orkney. Perhaps this resource was also used on Shetland.

This was also supported by compound-specific $^{13}$C stable isotope analysis of $n$-alkane molecules extracted from cattle dental calculus, carried out by Natália Égüez (AMBI lab, Universidad de La Laguna, Tenerife/University of Cambridge, UK). These hydrocarbon molecules are components of plant epicuticular waxes, the thin, protective layer on the outside of leaves, young shoots and other parts of the plant. $n$-alkane molecules are plant-specific due the distribution of carbon numbers and they can be used to characterise the vegetal origin of fodder material. This was the first time this approach has been applied to animal dental calculus. The initial results suggest that the $n$-alkanes recovered from the sampled cattle teeth have a marine origin, but rather than being from seaweed, they appear to be from seagrasses. Either these could have been gathered for use as fodder, or cattle were allowed to graze on the seashore. These new analyses at Jarlshof provide for the first time an exciting insight into sheep and cattle foddering and management during the Neolithic and Bronze Age on the Shetland Isles. The use of compound-specific analyses heralds a new direction in the study of farming at the outermost edge of the Neolithic expansion. Further in-depth analysis is needed to examine whether farming practices differed between Orkney and Shetland in response to different environments, as well as over time from the Neolithic to the Norse period, in response to climate change and pressures from growing populations. A full report and discussion of these results will be published shortly.

This study would not have been possible without the collaboration of National Museums Scotland (Edinburgh) where the material is held, and in particular Alison Sheridan and Jerry Herman.

Roz Gillis, InCARHB, Faro, Portugal (roze.gillis@gmail.com)

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**Black Loch of Myrton: an Iron Age loch settlement in south-west Scotland**

In June of this year AOC Archaeology Group completed the sixth and final season of excavation at Black Loch of Myrton, a wetland site in the machairs of Galloway. Preservation on this site has been astonishing, with upstanding posts and wickerwork in the walls of the roundhouses and *in situ* floors of bracken, sedge and rushes in which the individual plant components are still visible. This allows an unparalleled degree of chronological refinement on an Iron Age site and provides insights into the organisation and maintenance of living spaces in this period. Of particular interest are the episodic and short duration of occupation and the efforts at cleanliness.

The settlement was built on a natural island of peat and came back to light when the farmer began drainage operations to improve pasture. Since then, Historic Environment Scotland has provided grants for an annual season of excavation followed by a post-exavation programme.

The island is roughly 50 × 60 m and is connected to the shore by a natural causeway. It sat within a small shallow loch which had probably already started to terrestrialise when the island was occupied. The surface of the island is dotted with mounds, which our excavations have demonstrated are the stacks of stone hearths at the centres of roundhouses. Our strategy has been to target these and to explore the nature of the perimeter of the settlement, particularly around the causeway.

The post-exavigation programme is still ongoing, but a chronological framework for the occupation has already been provided by dendrochronological analysis of oak, alder, hazel and ash, as well as Bayesian analyses of the radiocarbon dates. In addition, the insects and plant macroremains, soil micromorphology and faecal steroids have been invaluable in understanding the taphonomy of the deposits and conditions within the roundhouses.
The first episode of settlement on the island began in 435 BC. This primary settlement consisted of at least three roundhouses clustered in the northern half of the island around a trackway of alder logs, which provide the main route into the settlement throughout its occupation. The settlement was protected by a palisade of closely-set alder posts. The roundhouses all appear to have been built to the same plan, with a double outer wall of wickerwork and an inner ring of stout oak posts linked by sillbeams supporting hurdle screens which created an annular division within the house. On either side of the entrance into Structure 2, wide oak planks inserted vertically into the ground created an imposing barrel-like façade. The entrance itself was built of squared oak posts set into morticed timbers to form an oak-lined passage into the interior, where the visitor would be confronted by the equally imposing central stone hearth. This was a massive square construction, some 2.8 × 2.6 m.

Within the house, every effort had been made to keep the floors dry; radial timbers had been laid directly over the peat, with wickerwork screens laid over these to act as sub-floors. The active floor surfaces in the houses consisted of compacted layers of bracken, sedges and rushes which were regularly stripped out and replaced. The outer annulus of the house was kept very clean. In Structure 2, the hearths, entrance structure and floors had been replaced three times. Bayesian analysis of 22 radiocarbon dates through the stratified sequence suggests that the house was occupied for no more than 30–40 years (and possibly much less) so a phase of refurbishment occurred roughly every decade.

The repeated refurbishment of the floors means that the houses have been disappointingly free of artefacts, except for coarse stone tools. However, this has been offset by finding a beautifully decorated lathe-turned bowl in a midden-like deposit just outside the palisade; there are currently no known parallels for this bowl in the British Isles.

Possibly around 400 BC, the settlement expanded into the southern half of the island. The palisade was dismantled and two of the three houses in this episode were built directly over it. We have not fully resolved the dating of this second episode yet, as there are no dendrochronological dates from any of the houses and the radiocarbon dates span the 7th to 2nd centuries BC. This large range occurs because some of the dates lie on the Halstatt plateau, where chronological precision is currently not possible. However, we know that the houses cannot have been built before 435 BC.

These houses were very different in character from those in episode 1. They are less robustly built, with single outer walls of small stakes and wickerwork and much smaller internal posts. In Structure 3, the most extensively excavated of this episode, the simple entrance consists of a pair of alder logs. Internal divisions are radial, not annular, and there are distinctive floor surfaces on either side of these divisions. There are seven hearths, all varying in construction, but smaller and simpler than those seen in the episode 1 houses. In Structure 6, two clay ovens contained food debris,
including hazelnut shells and marine shell. The most obvious
difference, however, is in the cleanliness of the floors. In
Structure 3 unburnt animal bone was found on the floors
together with metalworking debris, crucible fragments, a
weaving comb and thong-stretcher of bone, and a beautiful
spindle-turned yew baton of unknown function. All this
suggests craft workshops, where metalworking and textile
production may have taken place.

After a century of abandonment of the island there is a
flurry of dendro-dated activity around the entrance and
perimeter. In 278 BC, oak posts and a stake and wickerwork
fence appear either side of the trackway. Some time after
262 BC an earthen bank revetted by a palisade of oak posts
set in a stone-packed slot was built and finally, in 243 BC,
a palisade of massive oak planks was erected on either side
of the entranceway. These defensive perimeters cannot be
related to any settlement activity on the island, probably
due to preservation issues.

The Black Loch of Myrton is unlikely to have been the
only wetland settlement of its type in Scotland; a review
of antiquarian literature indicates a similar settlement at
nearby Dowalton Loch. Furthermore, the earliest Black Loch
settlement is contemporary with the crannog in Cults Loch,
some 30 km away (built between 438–412 BC), suggesting
that these are not diachronic settlement types, but a move
by the community to live on the water at this time, be it
on a natural or artificial island.

We have trumpeted the wonderful preservation at Black Loch
but the significance of the site lies more in its ordinariness.
Far from being unique, it is simply a palisaded enclosure – a
site type found throughout Scotland in the Iron Age – but
located in a wetland setting. Thus, the evidence recovered
here is widely applicable to Scottish Iron Age settlement
and the complexity of occupation and construction seen
only one-dimensionally on dryland sites can now be framed
within the more nuanced evidence from Black Loch.

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**Going round in circles: the relief decoration of Iron Age gold torcs**

Recent work by the authors has shown that many Iron Age
gold torcs, typified by the Snettisham Great and Grotesque
torcs and the Netherurd and Clededon terminals, were
produced using a sheet gold working technique (see PAST
84). Clearly visible on the interiors of both the Netherurd
and Clededon terminals, and on X-rays of the Great and
Grotesque torcs, is evidence that these terminals have hollow
relief decoration, with negative relief visible on the interior
mirroring the positive high relief of the exterior.

Initially, we assumed that this decoration was carried out
using a ‘textbook’ repoussé technique. This technique, where
the gold was worked from the interior using hammers and
punches, leaves a distinctively precise signature and can be
seen on the backs of many sheet metal objects, including the
Battersea and Wandsworth shields and various Bronze Age
gold lunulæ. However, both the Netherurd and Clededon
terminals (and perhaps the Great and Grotesque terminals,
although their interiors cannot be seen due to the attachment
of the terminals to neck rings) show a more ill-defined or
blurred relief on the interior, not typical of most repoussé.
In addition, even though the torc terminals were created in
three parts, we have always wondered how repoussé tools
could have been used in the cramped and closed interiors
of the terminals.

All the goldsmiths we have spoken to were concerned about
the practicalities of working within such confined spaces,
but no other alternative approach seemed forthcoming.
However, a chance comment from one of the goldsmiths,
Hamish Bowie, regarding the formation of the concentric
circle decoration seen on the Netherurd and Great torcs,
caused us to think that the technique used there might not
be repoussé after all.
The concentric circles seen on several torcs have puzzled us for a long time: apparently solid when seen in X-ray cross section, they nonetheless appear as faint indents on the interior of the Netherurd terminal. However, they would be almost impossible to create using the repoussé technique. Hamish offered an alternative suggestion: the circles were created from the exterior, with a circular raised bulge of material being collapsed back towards the terminal wall to create the shape. Such a technique would result in the circle ridges effectively bonding together to create apparently solid forms, the only trace of their origin being the slight circular indents on the interior of the terminal. This explanation fits both the evidence and the practicalities of production.

But we were still puzzled over the blurred/mottled interior of both the Netherurd and Clevedon terminals. One of the authors, Ford Hallam, is an expert in a Japanese technique known as *uchidashi*. The *uchidashi* metal working technique raises a large area of sheet metal (often copper, bronze or gold) into a dome, before filling the domed void with pitch, reversing and securing the dome onto a pitch pot, and then carrying out all other forming work from the exterior of the object: this includes raising – and depressing – the metal dome to leave high relief in some places and flattened areas in others. This looks very much like what we see in Iron Age gold torcs.

In addition, the tools used in the technique are simple, and many are organic: the dome is raised on a dished wooden block and wooden rounded stakes and mallets are used to form the dome, whilst a range of metal punches are used for the exterior work. These tools would be consistent with many of the bronze punches found in the archaeological record. The use of organic forming tools and anvils might also explain their relative absence in the archaeological record. When the object is completed, the pitch is heated and poured out, leaving an intricate, 3D, sheet metal artefact. Often highly detailed, there is no sign on the exterior that the object has been produced in such a way. However, a distinctive mottled/orange peel effect can be seen in the interior, just like the blurred and indistinct patterns seen on the interior of the Netherurd and Clevedon terminals. Still, there are some slight differences, as the interior of *uchidashi*-created artefacts displays an absence of repoussé type forms, and these are, albeit blurred, present in the Netherurd and Clevedon torcs.

We therefore suggest that basic repoussé was carried out on the interior of torcs to mark the position of high relief areas but then, in combination with a pitch filled, the majority of relief and decoration was carried out from the exterior using a working technique similar to *uchidashi*. Further research, including replication, will be necessary to clarify this, and we aim to start this work this autumn. In the meantime, this working theory fits the evidence and, given the unusual nature of the technique, may provide a further means of identifying particular workshops/goldsmiths in the Iron Age British Isles.

Tess Machling, independent researcher (t.machling@ucl.ac.uk), Roland Williamson, museum replica maker and Ford Hallam, master goldsmith
The Prehistoric Society Europa Conference 2019: Neolithic Connections: Britain, The Channel Islands and France took place in St Helier, Jersey from 14–16 June 2019. This year’s Europa celebrated the achievements of our own past President Dr Alison Sheridan, of the National Museums Scotland, in the field of European prehistory.

The Society was welcomed to the island by Jersey Heritage Trust and La Société Jersiaise. On the first day, Olga Finch (Jersey Heritage) and Nick Aubin (La Société Jersiaise) led a guided tour of some of Jersey’s most important Neolithic sites, reported on elsewhere in this issue. The second day we were welcomed by the President of La Société Jersiaise, as well as our President Clive Gamble, who told us we were going to make connections with fabulous sites, pots and exotic stones beloved of our honorand Alison Sheridan. How right he was! Olga Finch, archaeology curator at Jersey Heritage for 25 years, began with a fascinating overview of Jersey’s prehistoric archaeology and the developments over that time, not least the recent Ice Age Jersey project which is revisiting the famous site of La Cotte de St Brelade with its 220,000 years of occupation. She also described her own work at La Hougue Bie and the discovery that the tomb was aligned on the autumn equinox. She hoped that, with the help of everyone present, Jersey’s prehistory would continue to be unlocked in the future.

Tom Booth of the Francis Crick Institute then gave us an overview of recent developments in ancient DNA studies and their implications for early prehistory. The main theme was the emergence of two strands, a central European and a Mediterranean group, but also that it may have taken a long time for indigenous people in Britain to adopt the Neolithic. This was followed by Fraser Sturt (Southampton) who expertly guided us through the sea level changes in the Channel and the North Sea and their relevance to Neolithisation in Britain. Lesley McFadyen (Birkbeck College) described her recent fieldwork at Simon’s Sands quarry on Jersey’s west coast. The ‘Under the Sand’ project involved test pitting buried soils under the sand. Artefacts recovered from the Mesolithic to the Late Neolithic and Bronze Age include a significant amount of Cinglais flint from mines near Caen in neighbouring France.

Chris Scarre (Durham) and Luc Laporte (Rennes) then set the scene for the French connection and outlined the monuments of two regions – the south Morbihan and the Paris Basin. This was a useful reminder that the Channel Islands are part of the archaeology of the French mainland and attention was drawn to shared processes and reciprocal influences on the megalithic tradition on both sides of the Channel. François Giligny (Paris, Panthéon-Sorbonne) continued the theme with a talk about trans-Manche connections, particularly regarding flint mines such as Spiennes in the Paris Basin and the regional distributions of different types of enclosures.

The AGM was followed by the President introducing Alison Sheridan and reminding us of all her achievements. The Europa conference 2019

Europa 2020: People and Society in late Prehistoric Europe
University of Leicester, 19–21 June 2020

We are delighted to announce that the winner of the 2020 Europa prize is Prof Colin Haselgrove, University of Leicester, who is an authority on the Iron Age of Britain in its European context. Confirmed speakers include: Prof Janet Montgomery and Dr Tom Moore (Durham), Prof Ian Armit (Leicester); Dr Vincent Guichard (Bibracte); Dr Mel Giles (Manchester), Dr Katharina Rebay-Salibury (Vienna), Prof Nico Roymans (Amsterdam) and Dr Fraser Hunter (National Museums Scotland). The Europa lecture itself will be titled: “New places, new faces, new horizons: what shaped European societies at the end of prehistory?” If you have stamina left, we will round off the conference with a half-day field trip to the Iron Age hillfort on Burrough Hill on Sunday 21st.

In addition, the conference will also include exhibitors and a poster display. Those interested in displaying a poster should send a 150 word abstract to Annabell Zander at az661@york.ac.uk by Sunday 10 May 2020. Places for the Europa lecture itself are strictly limited, so early booking is advisable. Please use the booking form included in this issue or book online. Full details and a downloadable booking form are also available on our website.

An excited Alison receiving the Europa Prize from our President (photo: Jane Sidell)
Europa lecture itself was a tour de force through Alison’s 32 years at the NMS, her many research projects such as Projet Jade and other recent cross-Channel work, while pointing out the research questions that still need to be asked. In short, the Neolithisation of the British Isles and neighbouring France remains a complex issue! A jolly reception in the Jersey Museum foyer followed, when Alison was honoured with the Europa prize and our hosts were thanked in appropriate fashion.

A second day of lectures began with an introduction to the work of La Société Jersiaise. Chantal Conneller’s keynote covered Jersey before the Neolithic, spanning her work in the Channel Islands from the Palaeolithic to the Mesolithic. Andy Jones (Cornwall Archaeological Unit) then gave us the perspective from Cornwall, where recent development control work has given more substance to what is known of the Neolithic of south-west Britain.

Donovan Hawley (independent researcher) then gave a perspective from Guernsey, the more westerly Channel Island, with an emphasis on flint research, while Hélène Pioffet (Rennes) outlined her models of inter-Channel connections based on ceramic assemblages.

The final talk was from Clement Nicolas (Paris), who took us on into the Bronze Age and gave us an insight into the tool kit of the warrior elites with its beautiful flint arrowheads, wrist guards (bracers), daggers and special cups all fashioned by skilled craftspeople.

Everyone agreed it was a wonderful weekend, thanks also to the generous sponsorship by Cambridge University Press and the support of Jersey Heritage and The Société Jersiaise. However, the last word should go to Alison: ‘The importance of working more closely than ever with our French and other Continental friends, at this time of political madness, is underlined. What better way could there be to honour Grahame Clark’s legacy for European prehistoric studies?’ Indeed – bonne chance everyone!

Heather Sebire, English Heritage
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Prehistoric Society field trip to the megaliths of Jersey

This year’s Europa Conference in St Helier, Jersey, was preceded on 14 July by a field trip to visit the chambered tombs of the island, led by Olga Finch of Jersey Heritage and members of the Société Jersiaise. The sun was shining, spirits were high and guides were waiting. Our first visit, just outside St Helier, was the restored and displayed gallery grave (allée couverte) and cist-in-circle (ring cairn) at Ville-ès-Nouaux. Like most of the Jersey megaliths, both sites suffered from antiquarian excavation, but enough information survived to document Late Neolithic through to Late Bronze Age activity at this pair of monuments. Passing through stunning scenery and with excellent coastal views we reached the simple, circular early passage grave at La Sergenté, excavated in 1923. This site commands excellent views north to Le Pinacle and Les Mielles nature reserve in the dunes behind St Ouen’s Bay, as well as the impressive German coastal defences that line the shore and which house the small but emotionally charged Channel Islands Military Museum. From this vantage point, we were introduced to some of the other archaeological projects in the area, such as the Under the Sand project looking at buried land surfaces within the dunes (about which Lesley McFadyen spoke on Saturday afternoon) and
the exploration of drowned landscapes including menhirs and flintworking sites in the submerged off-shore peats.

On to St Ouen and Les Monts Grantez, where Société Jersiaise member Rosalind le Quesne was on hand to guide us around the remarkable passage grave with its well-preserved side chamber. Again, although excavated in the early 20th century, sufficient records remain to reconstruct the multiple inhumations associated with animal bone and shells, and the disturbed individual burial in the side chamber. Some of the large capping stones of the passage had been brought from as far away as Corbière some 7 km to the south.

No trip to Jersey would be complete without a visit to Le Pinacle, a multi-period site in a low-lying col between the island cliffs and the rugged, rocky outcrop that gives the site its name. From Early Neolithic ceramics and axes to a Gallo-Roman temple, this site possesses complex stratigraphy and has seen near continuous activity over almost five millennia. Whilst a kestrel hovered overhead, we were also treated to spectacular views of neighbouring Sark and Guernsey across a vivid blue sea. After lunch at the picturesque sandy Grève de Lecq on the north-west coast, it was on to Le Couperon in St Martin’s where Pippa Kergozou explained the history of this Late Neolithic gallery grave made of local conglomerate, as opposed to the granite of the previous monuments, and with an oval peristalith and unusual porthole slab at the northern end. Our next stop in St Martin’s was the impressive La Pouquelaye de Faldouet, where the Aubin family introduced us to the site. The tomb comprises a passage of upright stones leading to a circular area with two opposed side cists and a rear chamber covered by a colossal 24 tonne capstone, perhaps transported from over a mile away. The tomb produced rhyolite and jadeite axes, ‘vase supports’, a pierced patera and polished stone discs clearly showing links to the Breton Neolithic.

Our last stop was the world famous La Hougue Bie passage grave (Jersey’s Newgrange), complete with monumental mound superimposed with a medieval chapel. After an introduction by Olga we were given plenty of time to explore the impressive passage and chamber, the chapel, the on-site museum and the education and experimental area centred on a reconstructed representation of the Linearbandkeramik longhouse at Elsloo in the Netherlands.

Conversations over ice creams and coffee unanimously agreed on the excellence of the day. For those of us new to Jersey, it was a superb introduction to the geography and archaeology of the island and set the scene for the lectures that followed over the weekend. Our sincere thanks to Olga, the members of Jersey Heritage and the members of the Société Jersiaise, whose local knowledge and courtesy helped make for an excellent and informative day.

Alex Gibson (AlexGibsonArchaeol@outlook.com)

The 22nd Annual Iron Age Research Student Symposium

The 22nd Annual Iron Age Research Student Symposium (IARSS) hosted by Cardiff University was in full swing 29 May to 1 June 2019 with over 60 participants. The steering committee for this year comprised Adelle Brickling, Kate Faillace, Michael Legge and Tiffany Treadway, all of Cardiff University’s Department of Archaeology and Conservation. Tiffany Treadway welcomed everyone on the first evening by paying special tribute to the late Catherine Holtham-Oakley, organizer of the 2018 IARSS in Kent. This was followed by the conference’s keynote address from Prof Niall Sharples, who discussed the significance of regionality in Britain with an emphasis on Scotland, reflecting on inconsistencies in previous schemes and how to rectify these with current archaeological methods.

The second day encompassed finds-related papers under whimsically-named categories, with themes focusing on objects and settlement. The first, ‘Deposition: look at this stuff, isn’t it neat’ was chaired by Niall Sharples. Among others, this session saw Tiffany Treadway’s paper on her preliminary data for wetland depositional practices in Iron Age Wales and Scotland, which later won the Best Finds Paper award, presented by The Later Prehistoric Finds Group (LPFG). David Swan spoke about coin hoards and regionality in Gaul, and Katarzyna Tylawska introduced her research on marzeah – elite communal dining. The next session, ‘Settlement: there is no place like home’, was chaired by Dr Rachel Pope. Nebu George (Bangor) discussed allocated spaces within the Iron Age, winning Best Wales-related Paper, as awarded by the Royal Commission on the Ancient and Historical Monuments of Wales (RCAHM). Giacomo Bilotti and colleagues presented on fieldwork at the settlement site of Pianvalle, Italy, and Krystyna Truscoe discussed territorial oppida landscapes using aerial and LiDAR survey. The final

The delegates gathering in anticipation for Niall Sharples’ keynote speech (photo: T. Treadway)
session. ‘Material culture: a few of my favourite things’, was chaired by Adam Gwilt. In it, Matthew Hitchcock analysed shields, Jennifer Beamer investigated textile production, and Rebecca Ellis discussed animal representations on small finds. This was followed by a discussion with a lively debate on ethics, access to archaeological materials, limitations to privacy, and archaeological representation. Later that evening, a pub quiz was held at our local favourite, the Pen and Wig, led by Michael Legge and Kate Faillace.

The third day focused on bioarchaeological papers. The first session on ‘Bioarchaeology: I’ve got a bone to pick with you’ was chaired by Prof Jacqui Mulville. Rose Callis discussed her zooarchaeological analysis of the Applecross Broch, Mallory Ancitl identified biological differences between Iron Age populations in Austria, and Matteo Bormetti introduced his project examining animal husbandry in the British Later Iron Age. The session ‘Mortuary practice: I see dead people’ was chaired by Dr Richard Madgwick. It included Emma Tollefson’s (Manchester) paper on the various Iron Age mortuary traditions of the United Kingdom, which won the prize for Best Social Media Output, sponsored by RCAHM. Lois Turnbull (Cardiff), also presenting in this session, won Best Bioarchaeology Paper, awarded by Iso-Analytical to help fund isotopic analysis, for her work on the histotaphonomic analysis of burial rites at Ham Hill and South Cadbury. Michael Legge then discussed Iron Age mortuary practice in eastern England. The day also saw another headlining talk by Dr Seren Griffiths on Iron Age ‘henges’ and the revision of chronologies using Bayesian modelling. A Foster and Prosecco session followed, with a beautiful hillfort cake made by Cardiff University postgraduate Cadance Butler. Emily Patak (Liverpool) won the Best Poster award, sponsored by Sercon, for ‘The Molly Cotton archive: a forgotten history of hillfort studies.’ The day was wrapped up with an awards ceremony hosted by Adelle Bricking and Kate Faillace and a big thank you to all of IARSS’s sponsors, including those previously mentioned and Red River Archaeology.

The conference concluded with a field trip to Caeraw hillfort and St Fagans National Museum of History, led by Dr Oliver Davis. IARSS 2020 is to be hosted by the University of Manchester.

On behalf of the IARSS steering committee 2019, we would like to thank everyone for their support and attendance. We are extremely proud of our Iron Age cohort and the strength of study the conference demonstrated. As a student symposium, we are excited to have a preview of future directions for the field, and if the 2019 IARSS is any indication, we will be seeing even more cutting-edge scientific analysis of human and animal remains, as well as inorganic features like Nebu George’s roundhouses and artefactual evidence like Matthew Hitchcock’s shields. We are also grateful that so many researchers are revisiting older material, or small finds such as those collected by the Portable Antiquities Scheme, ensuring that under-studied artefacts and remains will be able to contribute to future narratives.

Tiffany Treadway, Cardiff University (TreadwayTL@cardiff.ac.uk) and Katie Faillace, Cardiff University (Faillaceke@cardiff.ac.uk)
engaged, and Paul Thomas and Juan Ignacio Jiménez Rivero (independent researchers) presenting an overview of their work as experimental potters, coupled with a display of some of the vessels they created.

The third session heard papers from Dan Boothby (University of York) on disarticulated human remains and Early Neolithic ancestorhood and Andrzej Aleksander Romanuk (University of Edinburgh) on micromammal remains from Skara Brae, Orkney.

The fourth and final session included papers on a variety of subjects. Johnnie Gallacher (independent researcher) proposed that Celtic languages may have emerged during the Neolithic or Early Bronze Age along the Atlantic façade, earlier than previously thought. Samantha Brummage (Birkbeck College, University of London) discussed microspatial histories for prehistory and finding human scales of narrative in the archaeological record, while David Osborne (University of Nottingham) spoke about the research needed to explore the changes in mobility between the Neolithic and Bronze Age in Britain.

The day concluded with our second keynote speaker, Catherine Rees, Co-Director of CR Archaeology, who spoke about her excavations at the Neolithic multi-house settlement at Llanfaethlu, Anglesey.

The posters displayed during the event addressed provenancing the dog/small fox bones from Wor Barrow (Justin Ayres, University of Sheffield), a study into the human aspects of Neolithic stone quarrying (William Powell, Birkbeck College, University of London), recent work on links between Beaker communities in Britain and on the near Continent (Claire Copper, University of Edinburgh), and rhythms and routes of Neolithisation in south-west Europe (Francisco Sanchez Diaz, University of Sevilla).

The organisers would like to thank all who attended as speakers, delegates or volunteers and the University of Manchester for hosting this event. We look forward to seeing as many of you as possible at NEBARSS 2019, to be held at the University of Worcester.

Sarah Jayne Botfield, University of Manchester (sarah.botfield@postgrad.manchester.ac.uk) and Ellen McInnes, University of Manchester

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Please also note that it will be necessary to increase subscriptions in a year’s time. Our last rise was twelve years ago, and good management by our Treasurer has steered us through some financial challenges. However, we have reached the point where these activities could become unsustainable without additional income. Subscriptions will NOT go up immediately, but Council will discuss the issue in the autumn and the new rate will be presented for approval at the 2020 AGM in Leicester.

We hope you agree that with the Proceedings (now also freely available online to members), newsletter, discounts on Society volumes, free lectures and many outings, membership is still well worth the subscription fee. Please do continue your support for our many activities and the research we fund. Thank you!
Collared Urns and cremations at Clitheroe, Lancashire: the excavation of an Early Bronze Age ring ditch

In 2018 Archaeological Research Services Ltd was commissioned by Taylor Wimpey UK Ltd to undertake an excavation centred on a ring ditch that had been identified by a geophysical survey and sample excavated during evaluation trenching. The site was located at the Phase 1 residential development at Higher Standen Farm, Clitheroe, Lancashire, 2 km to the south-east of the River Ribble, just above the floodplain and the town centre.

The excavation identified a total of nine cremation burials in a central position within the monument. Four of the cremation burials were found within Collared Urns, one of which (cremation 3) contained a smaller accessory vessel that had been inverted within the larger pot and held the cremated remains. Fragments of a sixth vessel were recovered throughout the fill of cremation pit 7, although it was not possible to state with certainty that the cremation had been interred within the urn. Assessment of the forms and fabrics of the vessels places them within the Early Bronze Age (c.1950–1500 BC), whilst radiocarbon dates obtained from seven of the nine cremations show that cremation activity at the site had a start date between 1995–1765 cal BC and an end date between 1750–1530 cal BC (95% probability).

The ring ditch itself fits into one of the characteristic forms of Early Bronze Age burial sites in Northern England, that
of the flat ‘ringwork’ that lacks either an earthen or stone mound. This form is particularly associated with the Pennine Uplands. The ring ditch had been severely truncated by extensive ploughing over a long period of time, surviving to an average depth of 0.18 m. If any sort of mound had once existed over the ring ditch then any physical surface remains had long since been removed from the site. What is more likely is that there may have been an inner bank formed by the upcast that was pushed back into the ditch upon final disuse.

Over 75% of the ring ditch was exposed by the excavations. Its outer diameter measured 19.7 m, the internal diameter 17.5 m. The lack of associated features within the interior of the ring ditch is likely due to the truncation that has taken place across the site, although it is rare for there to be additional features to burials found within ring ditch monuments. The broadly concentric pink-coloured pit-like features around the southern side of the ring ditch, although predominantly natural in origin, might represent the bases of trees or shrubs that were intentionally planted around the monument so that it had greater visual impact within the landscape.

The cremations and associated urns were clustered at the centre of the monument in an area that was no more than
The late discovery of a Late Bronze Age ringwork in east Devon

The Late Bronze Age and Early Iron Age in Devon present some problems for archaeological interpretation. This was a time when the well-known upland settlements and their ordered landscapes, such as those on Dartmoor, had been for the most part abandoned. Clearly, people lived in the area, and some sites are known, but there is an enigmatic shortage of material culture, in particular from settlements. It can therefore be difficult to assign features reliably to this time span, unless significant resources are invested in absolute dating methods.

Cotswold Archaeology recently excavated a circular enclosure, 37 m across and defined by a 2 m deep ditch, ahead of housing development at Hill Barton on the eastern outskirts of Exeter. The enclosure is one element of a complex of archaeological features on the site dating from the Neolithic through to the Roman period. This includes patchy evidence of Middle Bronze Age fields and structures associated with Trevisker Ware pottery.

The enclosure ditch contained very few artefacts but they included eight sherds of residual Early to Middle Neolithic pottery, two sherds of Trevisker Ware and a small quantity of worked flints. Pits and postholes relating to a central circular roundhouse were without any artefacts. However, both the ditch and central features yielded charcoal, from which 12 radiocarbon samples (on short-lived material) gave consistent dating, and were used to model the enclosure’s usage by Bayesian statistical analysis. The earliest dates fell around 1100 cal BC (from the basal ditch fills) with a more

2.5 m wide and extended for 5.5 m within an area of pink-tinted silty clay sediment that represented a fluvio-glacial stream course within the natural till. The presence of the cremations within and around the former stream course might not be purely coincidental. There is a long tradition of using ochre to accompany burials in prehistoric contexts. In the absence of ochre on the site, the use of the red or pink clay derived from the till might have served a similar purpose. As observed elsewhere in the trench (and during the preceding evaluation), naturally occurring veins of pink-coloured clay were present within the substrate across the site. There was no evidence to suggest that these areas had been heat-affected.

Radiocarbon dates obtained from the cremated remains demonstrate distinct ‘pulses’ of burial activity starting with cremation 4, followed by cremation 8, then by cremations 5, 1 and 3 which are statistically indistinguishable from one another, and finally by cremations 7 and 9 (also statistically indistinguishable). Bayesian modelling of the results presents a slightly different ordering, but also begins with cremation 4 and ends with cremations 7 and 9. Bayesian model 2 (including a charcoal outlier) shows that cremation activity is likely to have begun in 1995–1765 cal BC (95% probability) and ended in 1750–1530 cal BC (95% probability): a span with a minimum of 40 years activity and a maximum of 415 years (95% probability).

Four near-complete ceramic vessels and 59 sherds were recovered, exhibiting combinations of chevron, zig-zag and diamond motifs as well as parallel corded lines. Overall, a minimum number of six bipartite Collared Urns are represented, the typical funerary vessel of Early Bronze Age cremation burials generally dating from c. 1950–1500 BC. This fits well with the radiocarbon dates obtained from the cremations.

Osteological analysis of the cremated bone shows a full range of people buried within the monument, from juveniles to adults of both sexes. This indicates that burial within the monument was not restricted to particular people. Rather it is consistent with a familial group or extended family where burial rites were based on kinship rather than status. This is very much in keeping with the pattern noted for Early Bronze Age upland settlements, where roundhouses and associated fields and paddocks appear to have a small monument associated with them.

It is interesting to note that the only juvenile remains identified on site were contained in a double-urned burial in cremation 3, the smaller urn containing the cremated remains being inverted so that the rim was in contact with the base of the larger upright urn. This double layer of urn protection perhaps reflects the protection afforded to younger members of the population. This was then buried immediately adjacent to the young adult female in cremation 4, albeit in a later burial event. The remains in cremation 4 also contained an offering of barley seeds, which was perhaps a practice associated with the burial of females.

Palaeoenvironmental analysis of the charred material amongst the bones gives an appreciation of the wider surroundings of the burial site within its marginal Pennine location. Wood from alder, lime, ash and hazel was sourced from nearby deciduous woodlands, whilst oak and birch would have been available in woodlands around the site and, potentially, on the higher Pennine slopes. Cleared ground was suitable for the cultivation of cereals (barley) and supported wild fruiting trees such as apple and blackthorn. Areas of marsh or bog were also developing in lower-lying areas. The presence of these environmental remains suggests local cereal production, together with stands of mature woodland, younger saplings and fruit trees. Small areas of wetland or ponds are also likely to have been located close by.

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or less continuous sequence of ditch infilling until c. 600 cal BC, when the enclosure went out of use. This conclusively demonstrates a major episode of occupation starting in the Late Bronze Age and continuing until the Early Iron Age.

Cereals, including barley and emmer and/or spelt, accounted for most of the charred botanical remains from the roundhouse, and oak was the dominant wood here, presumably used for fuel. By contrast the ringwork ditch contained mostly wild seeds, with a large proportion of bramble, sloe and hawthorn stones and thorns, and the charcoal has a high percentage of hedgerow species. From this it seems likely that a thorny hedge contributed to the ringwork's defensive architecture. Bone, unfortunately, had not survived and nothing can be said regarding animal husbandry, although the ringwork was clearly suitable for coralling livestock.

There is Late Bronze Age Plain Ware from the site, although it derived (in small quantities) from an area of unenclosed occupation a short distance from the circular enclosure. This area was defined by a group of pits and postholes without
clear patterning but perhaps including a circular building. This restricted distribution of pottery lacks an obvious explanation, and adds further to the enigma of the nature of settlement and society at this time.

The central structure in the enclosure, defined by shallow postholes, is a classic post-ring roundhouse, with the entrance marked by a vestibule and porch facing south-east towards the enclosure entrance. The house was comparatively large, with an estimated diameter of 14 m – similar to the examples from Pimperne, Dorset and Balksbury, Hampshire. This combination of enclosure and central roundhouse appears to be unique so far in Devon. It is, however, remarkably similar in form to the ringworks in eastern England, such as South Hornchurch and Mucking North Ring. Furthermore, these sites have a similarly short duration. There are also clear parallels to Rathgall, Co. Wicklow in Ireland. Like these ringworks, Hill Barton occupies an elevated position and had commanding views, spanning the valleys of the Exe to the west around to the Clyst to the east. Whether this corresponded to political control over the resources of the area, however, remains difficult to assess from the excavated evidence.

Following the demise of the ringwork, settlement persisted in the Middle Iron Age at a less easily definable scale. As commonly found at sites of this period in Devon, settlement was identified by penannular gullies and other shallow features, without the larger storage pits often found in other parts of the country. There is some suggestion that the Middle Bronze Age fields provided the framework for land use until settlement enclosures on a different orientation were once more established in Late Iron Age and Roman times.

It seems likely that ringworks of Late Bronze Age date are to be found more widely in the British Isles, and it must be wondered how many circular enclosures of this size are still to be recognised for what they are. A similarity to Late Neolithic henges may prompt a reconsideration of this category of monument where they have been classified by form and dimensions alone, and where excavations have yielded inconclusive evidence as to their true identity.

A report on all the findings from the excavations is to be published in volume 77 of Proceedings of the Devon Archaeological Society.

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