

# PAST

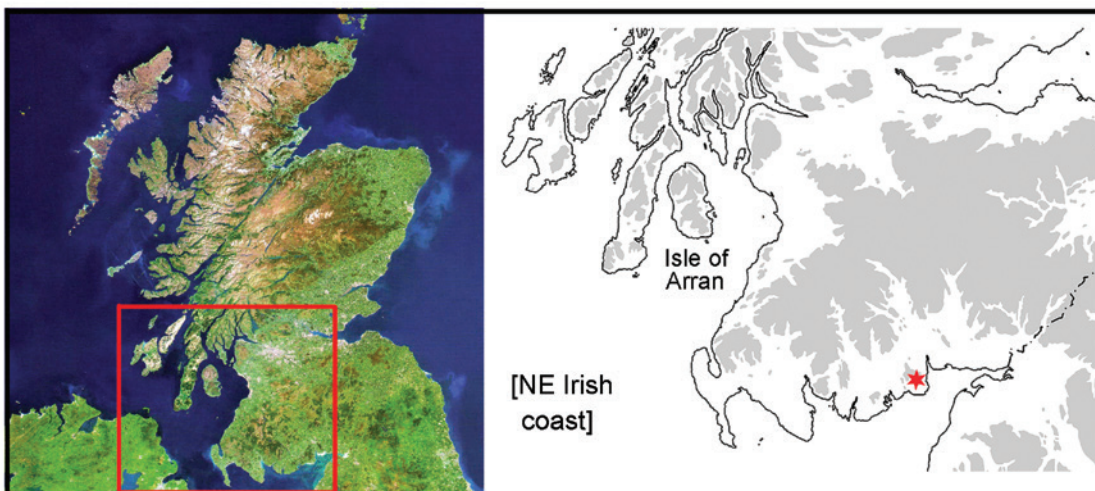
THE NEWSLETTER OF THE PREHISTORIC SOCIETY

## Artefacts of Arran pitchstone from Slewcairn Early Neolithic funerary monument, Dumfries and Galloway, Scotland

Between 1973 and 1980, the late Lionel Masters excavated an Early Neolithic long cairn at Slewcairn, close to the Solway Firth in south-west Scotland (NGR NX 9239 6142; Canmore ID 65491). The monument is situated on the slope of Meikle Hard Hill, 6 km from the coast and 15 km south-west of Dumfries. While Lionel published news of his excavations in *Discovery and Excavation in Scotland* (1973–80) and produced an unpublished interim report in 1977, he was not able to bring this important site to full publication before his death in 2019. His friends promised his wife Margaret that this, and a report on his excavation of a similar monument nearby at Lochhill, would be done, and it is thanks to a Prehistoric Society research grant, and to support from Glasgow Archaeological Society, and Forestry and Land Scotland, that this work is progressing. The Prehistoric

Society grant covered specialist reporting of the assemblage of Arran pitchstone found at Slewcairn by one of us (TB) and this article summarises his results.

The monument started its life as a free-standing, roughly north–south orientated rectangular timber mortuary structure roofed with birch bark; a paved area behind this may well have been associated and could have been used as an area where the dead were laid out until they decomposed. It is impossible to tell whether there had been a timber façade, as any trace would have been obliterated by the subsequent erection of a stone façade. The partial remains of seven people were placed in or on the mortuary structure and offerings of traditional Carinated Bowl pottery were deposited on the paved area (further sherds of the same pottery type



Location of Slewcairn and of the Isle of Arran, the source of the pitchstone



Unburnt (top) and burnt (bottom) pitchstone from Slewcairn. Cat. Nos 1 and 10 are chips; 13 – platform rejuvenation flake; 9 – blade; 15 – flake; 14 and 16 – crested pieces; 7–8 and 18 – blades; 17 and 19 – microblades; 2, 4–6, 11 and 12 – unworked chunks

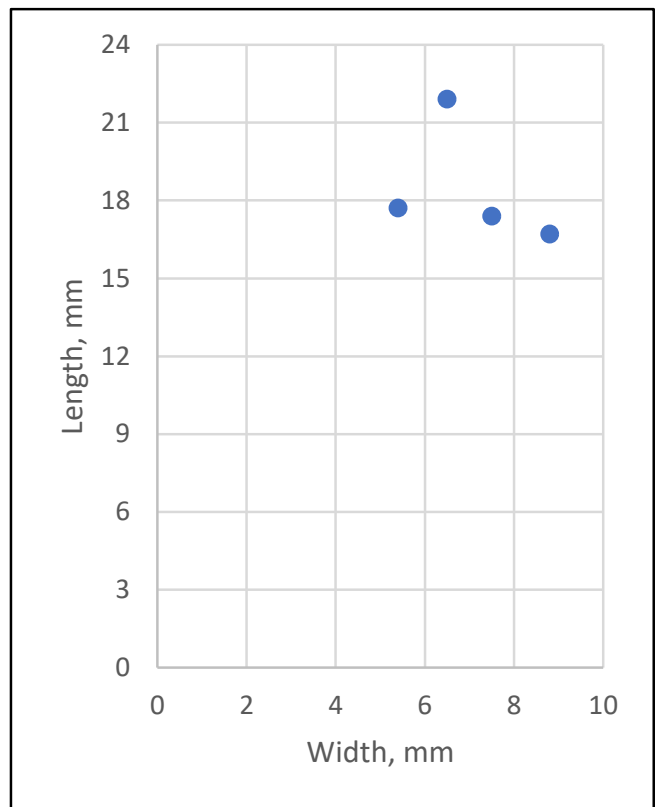
were found alongside flint leaf-shaped arrowheads, serrated flakes and a knife in a pre-cairn soil just to the north of the mortuary structure). The structure was then burnt down, and granite boulders were thrown onto the remains while they were still hot. Stone walling was erected on the footprint of the mortuary structure and a trapezoidal cairn, fronted by a stone façade, was constructed over it. Subsequent activity included the insertion of a corbelled passage and chamber into the cairn, the chamber located at the southern end of where the mortuary structure had been. Following the partial collapse of the forecourt façade, the monument was sealed during the Chalcolithic or Early Bronze Age, with three small cord-impressed sherds, probably from an All-Over-Cord Beaker, being found under the forecourt blocking. In addition, a pit containing sherds of a coarseware pot of probable Early Bronze Age date was found just outside the cairn.

A suite of five radiocarbon dates on hazel, oak, birch bark and calcined human bone, funded by Forestry and Land Scotland, have produced consistent results which indicate that the timber mortuary structure was constructed and used at some time between 3775–3642 cal BC (95% probability)

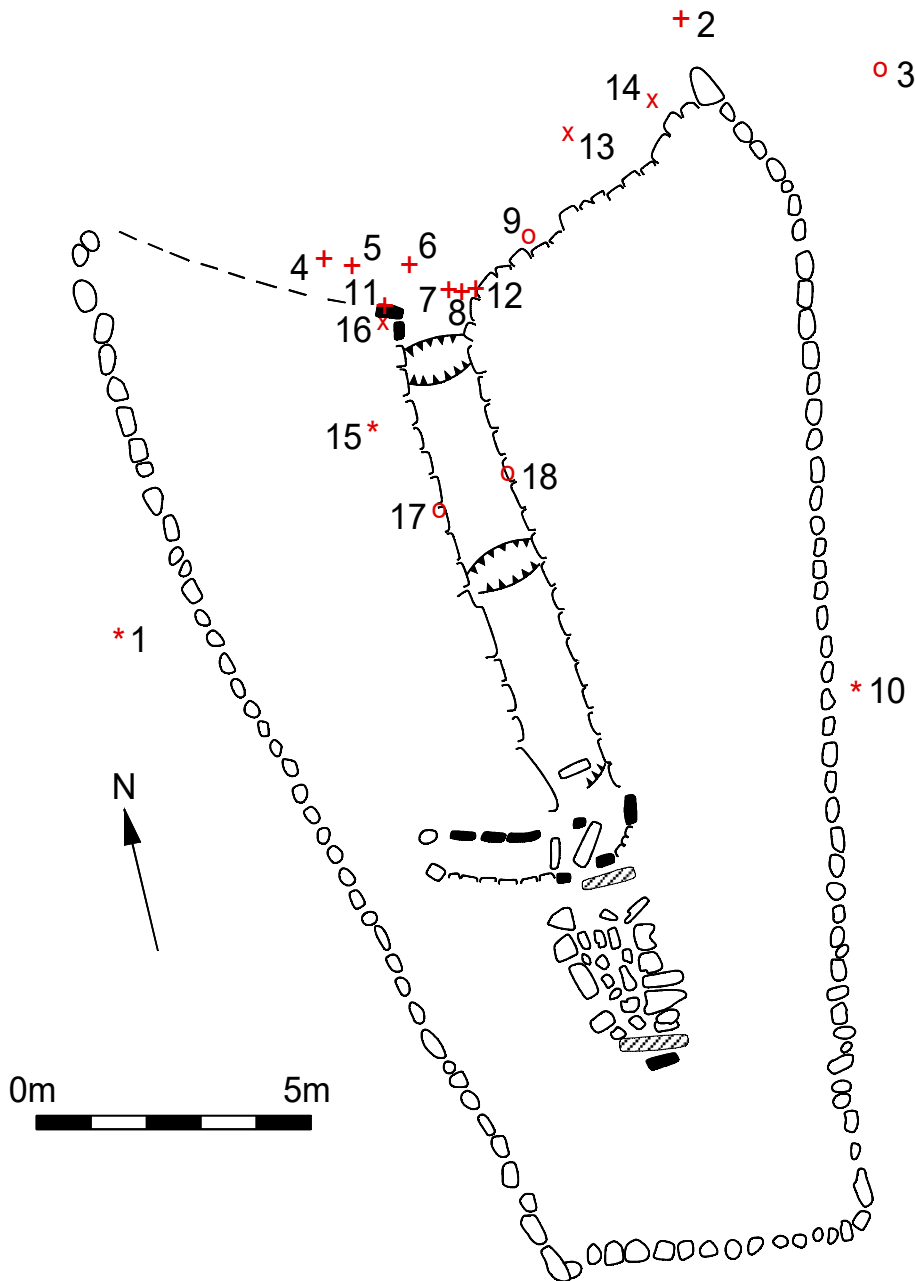
and 3701–3566 cal BC (95% probability) and that secondary activity occurred within the 3333–3015 cal BC date bracket.

Among the artefactual finds (which included items of quartz and a fragment of an axehead of Langdale tuff in addition to the pottery and flint objects), 19 pieces of Arran pitchstone were found, of which eight are burnt. They comprise blades, microblades, flakes (including a platform rejuvenation flake), chips, two crested pieces that were probably blanks for a blade and a microblade, and fragments from unworked blocks. No cores were present. While a hard hammer had been used to detach the platform rejuvenation flake from its parent core, all the blades and microblades had been detached by soft percussion. The people who were knapping pitchstone at Slewcairn were clearly focusing on the production of slender blades and microblades, with the elongated blanks having average dimensions of 18.4 x 7.1 x 3.2 mm, but with most pieces having widths between 6 mm and 12 mm. One microblade and two crested pieces (Cat. Nos 14, 16 and 17) have microscopic traces of use-wear along their edge, indicating that they were not new when deposited. No refits of the flakes, blades or microblades was possible.

The majority of the pitchstone finds come from the forecourt, mostly under the blocking material, with all but one of the burnt pieces (Cat. Nos 2, 4–8, 11 and 12) clustering around the entrance to where the mortuary structure had stood. One flake (Cat. 15) was found in the old land surface under the cairn and belongs to the putative pre-monument activity phase. A microblade and a blade (Cat. Nos 17 and 18), both unburnt, were found under the stone walling in the mortuary



Dimensions of all intact blades and microblades (including crested pieces)



Plan of the monument showing findspots of pitchstone (except Cat. No. 19 – no information)

chamber area, and crested microblade Cat. No 16 was found in soil among the lowest stones of the cairn, behind a façade slab. Two chips (Cat. Nos 1 and 10) were found under presumed blocking material outside the cairn, and a microblade (Cat. No 3) was found to the north-east of the cairn.

The pitchstone – a volcanic glass similar to obsidian – is aphyric and the unburnt pieces are black, while the burnt pieces have been discoloured to a light brown colour; the partially-burnt Cat. No 2 is black at one end and light brown at the other. Pitchstone is known to outcrop on the Isle of Arran, just over 100 km to the north-west of Slewcairn and perhaps around three days’ sail around the coast. The aphyric outcrops predominate in the eastern part of the island, especially at Corriegills.

Arran pitchstone is known to have been exploited from the Mesolithic until the Early Bronze Age, with the peak period of use being the Early Neolithic, when its distribution within

(and beyond) Scotland expanded dramatically as early farming communities established extensive networks over which resources, artefacts, ideas and people circulated. It was clearly a valued material and may well have had specific uses, possibly relating to its sharpness; the frequency of microlithic blades among Early Neolithic pitchstone assemblages is a notable feature. Surgical use, and use for scarification and even circumcision, are possibilities.

Much remains to be understood about why pitchstone was knapped at Slewcairn, and what were the circumstances of its deposition, but it is clear that the people there had obtained it in raw material form. The post-excavation project continues. The Prehistoric Society is thanked for its generosity in facilitating this work.

*Torben Ballin (lithicresearch@gmail.com)  
and Alison Sheridan (a.sheridan@nms.ac.uk),  
both Independent Researchers*



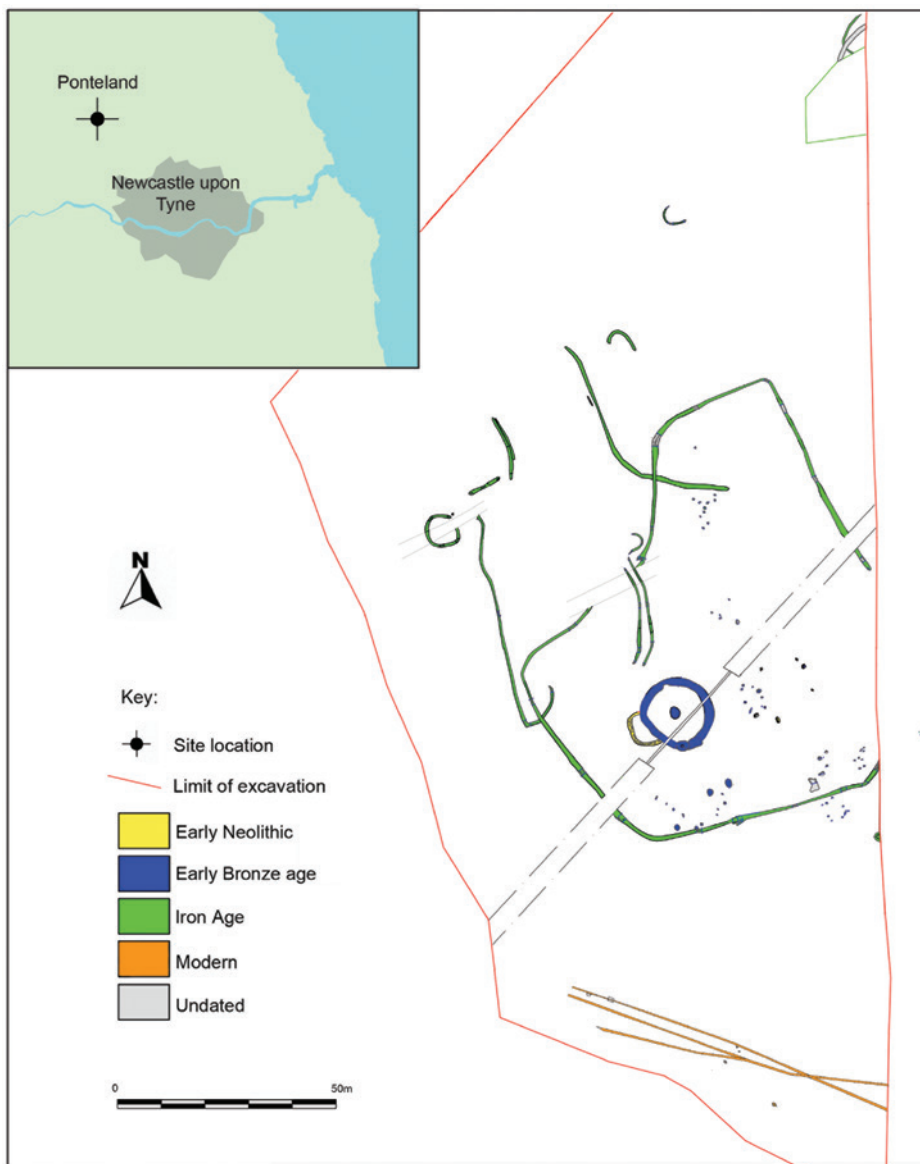
# Ponteland Leisure Centre, Northumberland: an Early Bronze Age ring ditch on the Northumberland coastal plain

An Early Bronze Age ring ditch associated with four inhumations and two cremations was excavated at Ponteland Leisure Centre by Archaeological Research Services Ltd in 2019. The site lies beside the Fairney Burn, a tributary of the River Blyth, on the Northumberland coastal plain 9 km north-west of Newcastle. Although heavily truncated by late medieval and more recent ploughing, the excavations revealed the sequence and funeral diversity of the burials, along with the remains of structures and other features relating to potential domestic or further funerary activity both prior to, and potentially associated with, the development of the ring ditch.

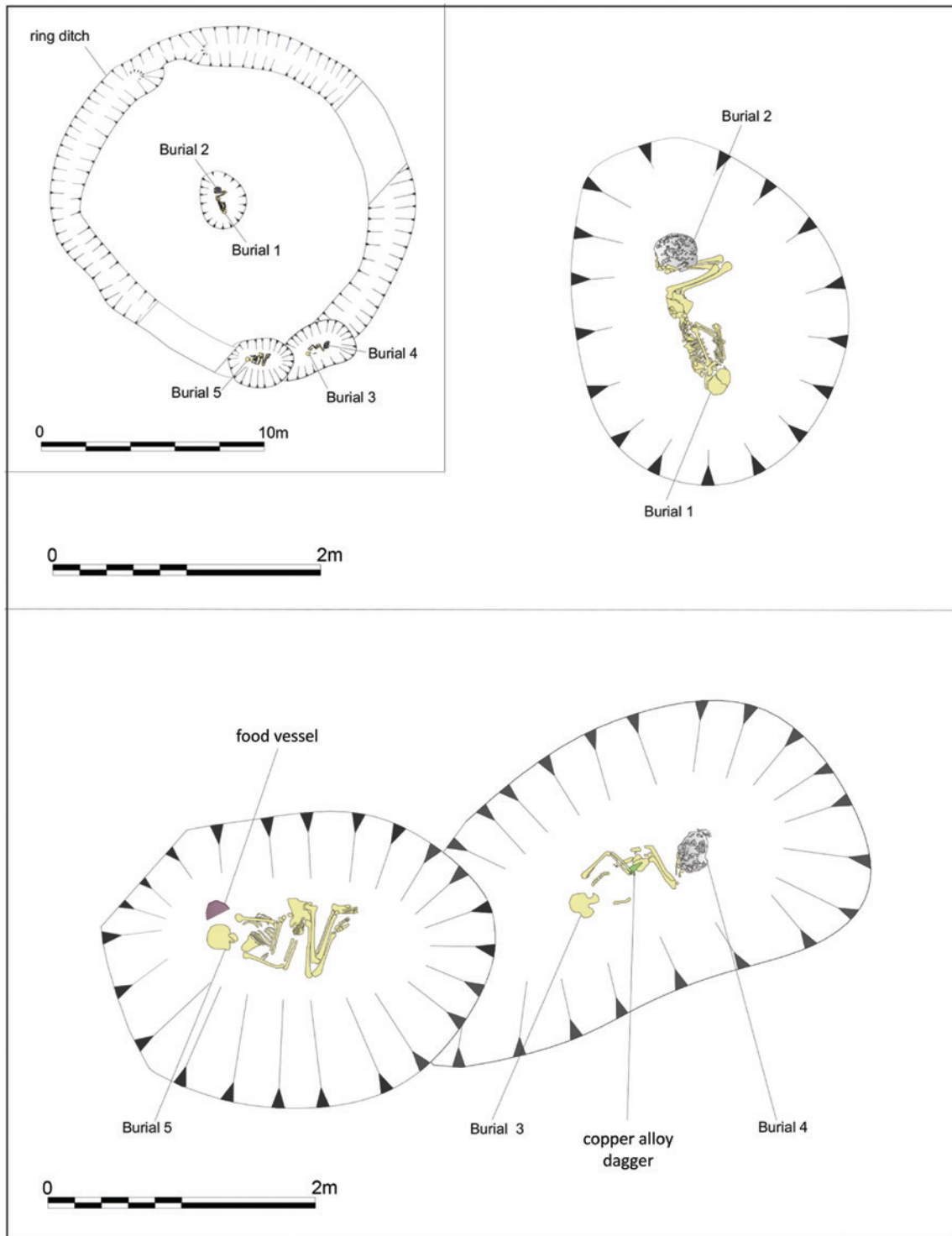
The earliest features encountered at the site included a pit containing fragments of three Carinated Bowl vessels and a post and wall-slot sub-rectangular structure, the eastern side of which had been truncated by the ring ditch. Charred oak from one of the structure's postholes produced a radiocarbon

date of  $5033 \pm 26$  BP (SUERC-94773: 3950–3710 cal BC at 95.4% probability). A pit containing fragments from a Beaker vessel and a charred barley grain radiocarbon dated to  $3817 \pm 26$  BP (SUERC-94772: 2400–2140 cal BC at 95.4% probability) was situated 25 m to the east of the Early Neolithic structure.

The earliest burial was a biological female of about 15 years of age dated to  $3603 \pm 26$  BP (SUERC-94763: 2030–1890 cal BC at 95.4% probability) placed in an oval burial pit in a flexed position on her right side. A second burial in the form of a cremated adult dated to  $3622 \pm 26$  BP (SUERC-94764: 2120–1900 cal BC at 95.4% probability) laid over the first burial's feet. Burials of this nature are known elsewhere in Northumberland, as exemplified by the crouched adult female inhumation associated with a flint plano-convex knife with the cremated remains of two individuals added lying over her legs that were deposited in a short cist at the Tankerville Arms Hotel, Wooler. The ring ditch at Ponteland was centred



*Location of Ponteland and plan of the prehistoric features*



The Early Bronze Age burials associated with the ring ditch at Ponteland

on the primary burial with an entrance causeway left across the ditch so that the central area could be accessed. After the ditch had started to silt up the penannular ring ditch and its entrance were then reconfigured to create a continuous, annular ring ditch.

A rectangular post-built structure was located immediately adjacent to the ring ditch with possible associated pits that contained a small quantity of flint debitage, a knife fragment and a thumbnail scraper. The fill of a posthole from the structure contained a charred sedge seed dated to  $3644 \pm 26$

BP (SUERC-94771: 2140–1930 cal BC at 95.4% probability). The function of the structure remains unknown. It could have preceded the ring ditch or have been associated with the adjacent funerary activity, perhaps as a charnel house, or part of a domestic settlement.

A third individual, an adult dated to  $3550 \pm 26$  BP (SUERC-94765: 1970–1770 cal BC at 95.4% probability), was placed on their right-hand side in a flexed position with a copper alloy dagger at the waist, in a pit cut into the infill on the southern side of the ring ditch. As with the initial burial, a cremated adult



View looking east of the Early Neolithic sub-rectangular structure and the Early Bronze Age ring ditch, with the earliest grave in the centre of the ring ditch. The unexcavated sections of the ring ditch are where the modern electricity cable runs through the monument

dated to 3644±26 BP (SUERC-94766: 2140–1930 cal BC at 95.4% probability) had been laid on their feet. Burials with daggers occur elsewhere in north-east England, as well as clustering in east central Scotland, and the dagger is typical of other examples from the region, for example at Reaverhill. The presence of three intact rivets with the dagger indicate that it originally had a hilt made from a perishable organic



Burial 3, accompanied by the copper alloy dagger



The Vase Food Vessel placed adjacent to the skull of the adult female Burial 5

material. It is best classed as a 'butt riveted' type, a later development than tang or tang-and-shoulder riveted daggers. The final blade was formed by the light forging of a cast blank produced from a two-piece mould. Non-destructive XRF analysis indicates that it is made from tin bronze likely to contain around 10% tin. Traces of arsenic and lead were detected whilst zinc was detected in 50% of the samples for the blade but not in the rivets, and traces of nickel was noted in the rivets but not in the blade. The apparent difference between the rivets and blade suggest they are not from the same source of metal and may indicate the range of materials available to the smith when finishing the artefact.

A third grave containing an older biological female of 36–45 years of age dated to 3574±26 BP (SUERC-94770: 2030–1820 cal BC at 95.4% probability), also flexed and laid on their right-hand side, was dug into the south side of the ring ditch so that it partly cut into the west side of the previous grave. Above her skull lay the fragmented remains of a squat Vase Food Vessel decorated with twisted cord impressed decoration. This could echo the wider pattern observed where secondary burials accompanied by Food Vessels are inserted or added to pre-existing Beaker period cairns in the region, as exemplified by Low Hauxley.

The final burial for which evidence survived comprised the disarticulated remains of an unsexed juvenile of around 9 years of age dated to 3412±28 BP (SUERC-97440: 1870–1620 cal BC at 95.4% probability), probably disturbed by subsequent ploughing. These remains were found within the upper part of the backfill of the initial central grave, which also contained fragments of a Beaker vessel that could have come from the fill associated with the initial burial.

The two females displayed perimortem blunt force trauma of the skull which, in both cases, was the likely cause of death. Interpersonal violence may have been prevalent and this may have been a time of heightened socio-political stress, potentially relating to the integration of people descended from Beaker-using arrivals and populations who had been established for far longer in the area. The results of the aDNA and stable isotope analyses being undertaken may throw further light on this.

After the final interment in the ring ditch the site may have continued in use, for example as pastureland, into the 1st millennia BC until a Middle–Late Iron Age farmstead was established, initially comprising a series of unenclosed circular structures. This was followed by the construction of a rectilinear timber palisaded enclosure, the western half of which was centred on the location of the Early Bronze Age ring ditch, perhaps indicating that traces of this monument were still evident in the 1st millennium BC. A second enclosure was then constructed with subsequent alterations of the enclosure system taking place, including the addition of a driveway between the two enclosures, until the settlement was abandoned, probably by the end of the 1st millennium BC.

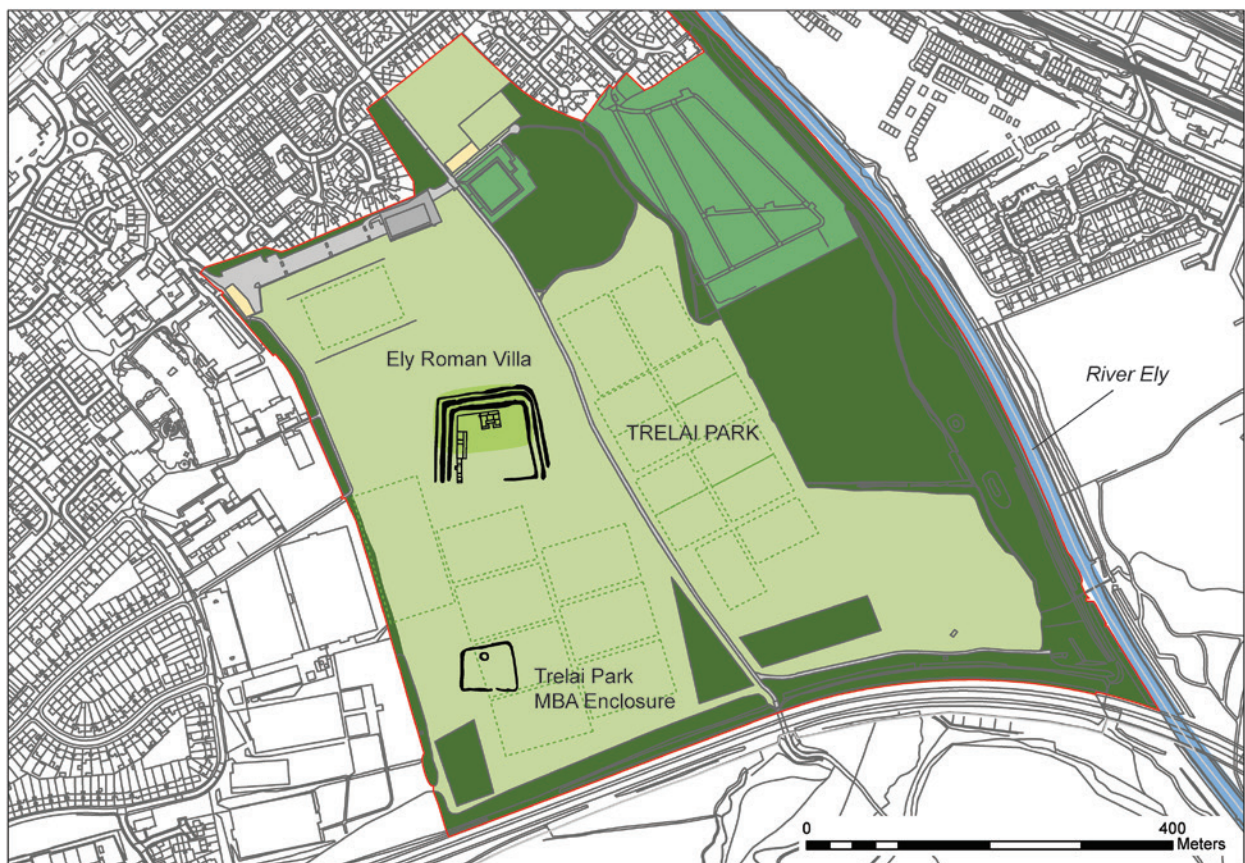
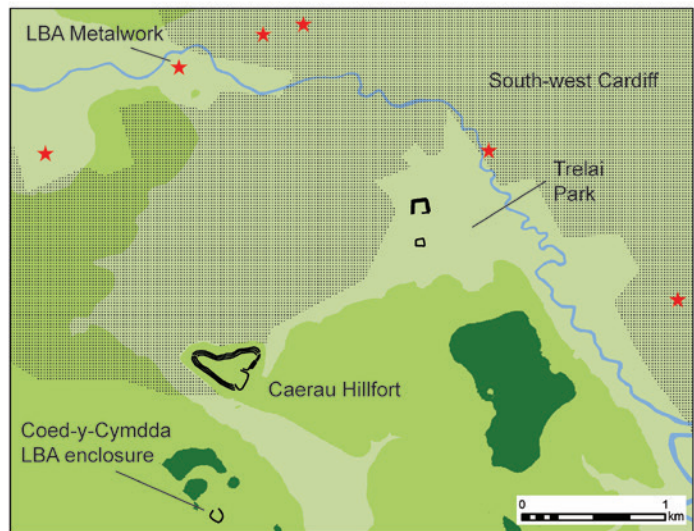
Milena Grzybowska  
([milena@archaeologicalresearchservices.com](mailto:milena@archaeologicalresearchservices.com)),  
Archaeological Research Services Ltd



# The first Middle Bronze Age rectilinear enclosure discovered in south Wales

Geophysical survey and exploratory excavations by Cardiff University's 'CAER Heritage' team have uncovered the unexpected remains of a Middle Bronze Age enclosure in Trelai Park, south-west Cardiff. The Trelai Park enclosure is morphologically similar to other Middle Bronze Age rectilinear enclosures such as South Lodge and Down Farm in southern England, but until now such sites were thought to be absent in Wales.

Funded by the National Lottery Heritage Fund, CAER Heritage is a major community archaeology project that has been exploring the hillfort of Caerau, south-west Cardiff, with local communities for over 10 years. A significant Neolithic causewayed enclosure was revealed at the site in 2014 alongside important Iron Age, Roman and Medieval remains, previously published. Recent work has focussed on examining the landscape around hillfort. This is not straightforward



Location of the Trelai Park Middle Bronze Age enclosure, within the wider context of other known prehistoric sites in south-west Cardiff



*The Middle Bronze Age ceramic vessel from the enclosure, which displays both Trevisker and Deverel-Rimbury characteristics*

because the site is almost entirely surrounded by houses constructed in the mid-20th century. However, around 1,500 m east of the hillfort is a large area of open ground known as Trelai Park. Within the centre of the park are the remains of Ely Roman villa which was excavated by Sir Mortimer Wheeler in the 1920s. A geophysical survey by Tim Young in April 2022 revealed a rectilinear enclosure 50 m by 60 m around 200 m south of the villa. Although smaller, and defined only by a single ditch, its trapezoidal shape in plan is similar to the villa enclosure. A single entrance is evident on its southern side while internally there is a possible ditch serving to partition the interior (not shown on plan) and a circular feature (roundhouse), whose position within the enclosure seemingly mirrors that of the main villa building within the adjacent settlement.

The proximity and morphological similarity of the two enclosures suggested that the newly discovered site would likely date to the Late Iron Age or Early Roman period, perhaps providing the link between the abandonment of the hillfort in the 1st century AD and the establishment of the villa in the early 2nd century. In the summer of 2022, the CAER team opened three trenches over the trapezoidal enclosure. This revealed the remains of a well-preserved roundhouse with associated floor surface and a material assemblage that included copper alloy slags, worked flint, utilised stone and ceramics. The enclosure ditch was accompanied by an internal bank fronted by a line of postholes which presumably formed a timber revetment. A thick layer containing fragmented stone and flint, probably derived from occupation, accumulated in the ditch before a complete ceramic vessel, which had been deliberately burnt, was placed upright on top of this fill. It displays both Trevisker

and Deverel-Rimbury characteristics, including applied horseshoe and impressed cord decoration, which places both the vessel and enclosure firmly in the Middle Bronze Age. A sample of charcoal adhering to the pot produced a date of 1515–1430 cal BC at 95.4 % probability (UBA-49586 3215±23).

Occupation was seemingly relatively short, with a focus during the period 1500–1400 BC. This is comparable to the better-known Middle Bronze Age enclosures of Wessex and Sussex. These enclosures in southern England are often associated with contemporary field systems, and their appearance seems to indicate an increasing concern of households to demonstrate their independence from wider society. Middle Bronze Age settlement in south Wales is rarely encountered, but where it has been, it is generally characterised by open settlements of one or two roundhouses. This has often been taken to indicate that patterns of residential mobility may have persisted for longer in this area, especially as large-scale land division was not apparently a feature of the Welsh landscape. The Trelai Park enclosure is therefore currently exceptional, but that other enclosures of this type exist in the region is quite likely. Enclosures morphologically similar to Trelai Park for instance are well-known in south Wales from cropmarks, but these have commonly been assigned a Late Iron Age or Roman date. The possibility that some may be much earlier in origin must now be seriously considered, and this may have significant implications for how we understand Middle Bronze Age society in this area. Work at Trelai Park is planned to continue in 2023 with further exploration of the interior of the enclosure.

*Oliver Davis (davisop@cardiff.ac.uk) and Niall Sharples, both Cardiff University*



## Programme of Meetings 2023–2024

DATE	VENUE/FORMAT	DETAILS
<b>2023</b>		
Fri 2 – Sun 4 June	Conference University of Cambridge	<i>Peopling the Past: Reflecting on Prehistoric Europe</i> Annual Europa Conference
Fri 16 Jun 4.30pm (BST)	Tour Ashmolean Museum, Oxford	<i>Labyrinth: Knossos, Myth and Reality</i> , by Dr Andrew Shapland, Sir Arthur Evans Chair of Bronze Age & Classical Greece, Ashmolean Museum Curator-led tour of the Exhibition
Sat 2 Sep 2pm (BST)	Lecture Leeds Civic Museum	<i>Prehistoric Henges in Yorkshire and beyond: recent research</i> , by Dr Alex Gibson, University of York Annual joint lecture with Yorkshire Archaeological and Historical Society
Fri 13 October 7.30pm (GMT)	Lecture The United Reform Church Hall, Church Road, Welwyn Garden City, AL8 6PR.	<i>The Neanderthal people of La Mancheland: a deep time record of a lost cross-channel landscape</i> , by Dr Matt Pope, Associate Professor in Palaeolithic Archaeology at UCL Institute of Archaeology Annual joint lecture with Welwyn Archaeological Society
Sat 4 November 2.15pm (GMT)	Lecture Blended (in-person/online) Norwich Castle Museum, Castle Meadow, Norwich	<i>Hillforts of Britain and Ireland - an overview of a monument type from the nineteenth to the twenty-first centuries</i> , by Prof Gary Lock, University of Oxford and Prof Ian Ralston, University of Edinburgh Annual joint lecture with Norwich and Norfolk Archaeological Society
<b>2024</b>		
Mon 5 February 6.00pm (GMT)	Lecture Venue TBC	<i>'Rewilding' later prehistory: Archaeological wildlife and its role in contemporary nature recovery</i> , by Dr Anwen Cooper, Oxford Archaeology Annual joint lecture with Cambridge Antiquarian Society

## Conference Grant Fund Reports 2022

The Prehistoric Society's Conference Fund aims to further the development of prehistory as an international discipline. Two scholarships are available each year, usually in the range of £200–300 each, with an application deadline of 31 January. Here, the two recipients of the 2022 fund report on their research and experiences.

**RAVINDRA DEVRA, Indian Institute of Science  
Education and Research, Mohali**  
25th European Association for South Asian  
Archaeology Conference, Barcelona, July 2022

*Presented paper on 'A new Acheulean assemblage from the arid core of Thar Desert, Western India'*

In the last few decades, the Afro-Asian deserts have received exceptional attention for human evolutionary studies. Present-day deserts are subject to investigation since they cover a large part of Africa and Asia in the old world's hominin migration route. A pattern of archaeological findings in North

and Eastern Africa continues in the adjoining Middle East Asia. The Late Acheulean (LA) and Early Middle Palaeolithic (EMP) sites are important in tracing the dispersal routes and timings of the migration of anatomically modern humans. These cultural expansions also covered a large part of the Old World, including South Asia, representing some of the oldest Acheulean and Middle Palaeolithic assemblages. The Thar, a warm desert of South Asia, is located in the north-western part of the Indian subcontinent and is one of the major geographical regions in focus for Palaeolithic cultural expansions and Late Quaternary environmental studies. The previous studies of lithic artefact findings from different sites suggest that the region was sporadically occupied during the Palaeolithic, which indicates its ecological suitability for cultural development. The substantial work done in palaeoanthropology here is primarily concentrated in the semi-arid margins of its southern, western and eastern parts. Like the research results coming from the Arabian deserts, it is very likely that hominins also occupied the core arid part of the Thar at multiple points in the past. Very few detailed studies have been conducted in this particular sub-zone despite being located on the potential cross-roads of hom-

inin dispersal routes. Recent multidisciplinary studies largely focus on previously known areas.

This study, which was presented at the 25th EASAA conference, focuses on the relatively lesser-known area of the Central Thar desert in the western part of the Rajasthan province of India. Detailed surveys were undertaken in this area to confirm the presence of archaeological remains, to fill the geographical gap among the site complexes of the Thar (e.g., Sindh, Kachchh). The study investigates the continuity of LA and EMP throughout the arid ecozones, an area avoided in popular theories of human migration routes. Our assumption was based on certain paleoenvironmental studies and pilot surveys conducted by the author during 2014–15.

Tracing the pieces of information in the form of surface lithic artefact scatters made it possible to pinpoint a rich site with remains of multiple cultural occupations. It is located in the Jaisalmer district, near the village of Neran and a small ephemeral river of the same name. While documenting the site, our team identified a pattern of artefact occurrences that helped us understand the site's different cultural units. We made many systematic lithic artefact collections along with random ones and also observed the sediment context of the cultural material. From the beginning of the investigation, this site appeared unique in this region, in terms of the quantities of material and their state of preservation. While doing the field study, we recorded the raw material source and stratified context for further study. So far, this could be the only site having the potential for relative dating of the cultural material in a secure stratified context. The maximum number of artefacts were related to the cultural phase of post-Acheulean, prominently the Middle Palaeolithic group. The different cultural assemblages are mixed and associated with the particular landscape context. This site is located almost at the centre of the known site cluster of the Palaeolithic Thar. The findings strengthen the argument that this South Asian desert was occupied during the Middle and Late Pleistocene period, and the climate of that time was conducive for the human and relevant biota. Besides the Lower and Middle Palaeolithic, Later Palaeolithic type of microlithic cluster is also found in the vicinity of the site, which could be of Holocene hunter-gatherer society.

It is imperative to consider the presence of spatial, cultural continuity during the Palaeolithic in the present-day arid climate zone. This centre point discovery could lead us to spot more intermediate sites in connection with the known Palaeolithic realm. Like many other site complexes of this region, the Neran also shows the presence of Acheulean and Middle Palaeolithic in close spatial proximity. This pattern could be due to the identical preference for the place by a different group of hominins at a different point in time. One cannot deny the possibility of cultural transition through regional innovation in the lithic tool technology or by the immigrant group. Detailed lithic analysis is part of my doctoral research, which will provide greater detail. Next-level research applying excavation and dating methods may unveil other aspects of the site in future.

**JESSICA BATES, University of York**

3rd Conference of the Association of Archaeological Wear and Residue Analysts: Tracing Social Dynamics, Barcelona, April 2022

*Presented paper on 'Interpreting structures: the social dimensions of tool using areas at the Early Mesolithic site of Star Carr, UK'*

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With the grant from the Prehistoric Society, I was able to travel to and attend the Association of Archaeological Wear and Residue Analysts (AWRANA) conference held in Barcelona at the CosmoCaixa Science Museum, from 4th–7th April 2022. These events are only held every five years, so it was a rare opportunity to meet with researchers from across the world who specialise in wear and residue analysis. Originally this conference was due to take place in 2020 but had been delayed due to the COVID-19 pandemic, so to be able to meet everyone in person and discuss our research together was a real privilege.

The four days were packed with papers on a range of key themes and one of the days included a poster session where over 50 posters were presented by their authors and co-authors. On the first day there was a great introduction to the development of use wear and residue analysis through the history of AWRANA conferences. This included a summary of what was covered in each conference held since 1977, as well as some brilliant pictures of key researchers at these events who developed the field.

On the second day, I was fortunate enough to present a paper on research and results from my PhD, as well as co-authoring a paper presented by a colleague. My paper titled 'Interpreting structures: the social dimensions of tool using areas at the Early Mesolithic site of Star Carr, UK' took place in a session exploring 'Activities in Space'. The session was structured chronologically and covered a range of topics from use wear on burin spalls in Upper Palaeolithic Japan to exploring socioeconomic variations through grinding cereals in southern Ethiopia. There was some great discussion in the session concerning different scales of activities and how use wear can be effectively applied across these scales to address key questions in tool use and social interactions.

Other key themes covered by the sessions were: tracing symbols, addressing past tools/kits to reconstruct social dynamics, new issues and challenges, and teeth in focus. A significant number of papers had a methodological focus, applying quantitative methods to interpret tool use. Methods included confocal microscopy, scanning electron microscopy and 3D imaging. This reflects current interest in how researchers can account for the interpretative nature of use wear, though interpretation is present in the application of any scientific method. The final session of the conference covered the future challenges of the field, with papers discussing how we account for taphonomic issues when interpreting tool use, increasing transparency in experimental



methods, and cleaning protocols, to name a few examples. This was an ideal way to bring the conference to a close as future steps for the development of the field were presented.

I am incredibly grateful to the Prehistoric Society for enabling my attendance at the AWRANA conference. It was the first

time that I had met many of the key researchers in use wear and residue analysis, and it was brilliant to discuss their work and my own research in more depth. I hope to be able to continue contributing to the field and attend the next meeting in 2025.

## Prehistory in the Past and the Past of Prehistory

Day School, Saturday 4 March 2023, Society of Antiquaries, London

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In March the Prehistoric Society hosted the first of three hybrid day schools which explored the history of the discipline of prehistory, how prehistory has been presented and the challenge of deep time.

Dr Sophia Adams introduced the day and unpicked the term 'prehistory', explaining how this vast swathe of time is always defined by its relation to the periods and developments that follow. This diverse era deserves to be freed from being the prologue to the historical story. The term is still entrenched in past ways of linear thinking to explain the developments that have led to now. Challenging the word 'prehistory' set the tone to review our discipline's history and engage with the different discourses presented.

Dr Rachel Pope then traced the origins of the Prehistoric Society in East Anglia, with its strong focus on flints, through the 1930s and admiration for the German model of state-funded archaeology, then to the post-war years. The aims of that first Society to facilitate dialogue, to study all matters prehistoric and to disseminate knowledge remain at the heart of the modern Society. The early years showed the Society to be visionary and progressive. Dorothy Garrod, President in 1928, identified archaeology as cultural history moving the discipline away from the earlier natural history connections. She also embraced a more global perspective. These are the foundations for the modern Prehistoric Society. Rachel spoke about the fine tension between academic standards and public engagement; when we get that balance right, this is the Prehistoric Society at its best. Rachel's presentation was recorded and is available to watch on the Society's YouTube channel.

The next two speakers reviewed the history of prehistoric research and how we create the identities of the periods from the Upper Palaeolithic to the Iron Age. Dr Chantal Conneller began with the Upper Palaeolithic and then detailed four newly defined phases of Mesolithic time. She highlighted the very human moments visible at Star Carr — a dropped bag of tools and the re-sharpening of an axe. These promote a sense of connection amidst the challenges of studying population level changes across large spans of time. Chantal acknowledged the value of periodization for interpretation but also emphasised the risk of creating the idea of abrupt change.

Professor Tim Champion acknowledged archaeology's huge public appeal over the last 50 years which has also reached into political realms. During this time there has been an explosion of archaeological data thanks to large-scale infrastructure projects and the Portable Antiquities Scheme, combined with massive advances in scientific techniques. These enable us to study entire landscapes through deep time. Tim noted the shifts in perceptions, for example, in the understanding of the Bronze Age agricultural revolution and exchange industries and networks. 1970s interpretations focused on trade which reflected the contemporary economic and political picture. Tim argued that we need to explicitly challenge both the foci of study and assumptions. This challenge lies at the heart of the day school.

The next sessions extended our consideration of deep time beyond Britain and Europe. Professor Jago Cooper looked at different conceptions of time referencing Andean cultures. The western conception of linear time has permeated our traditions of research. By considering how other cultures understand time differently Jago encouraged us to play with our perception of time. Andean cultures see time as circular or cyclical where the past, present and future are rooted in people, objects and places and may be experienced at multiple times.



*Dorothy Garrod, President of the Prehistoric Society in 1928, depicted at Roc-aux-Sorciers, an Upper Palaeolithic rock shelter site, in 1948. Illustration by Rob Hedge, after an original photograph © MAN, fonds Saint-Mathurin*

Dr Qin Cao spoke about the Bronze Age Shang dynasty, an important time during the formation of Chinese civilisation and the first with written records. The late Shang site at Yinxu, modern Anyang has been excavated for over 90 years. Qin charted the variations in how areas have been selected for excavation and explored shifting approaches to the interpretation and presentation of the archaeology to academic and public audiences, including the recent YouTube Lives filmed from the excavation. She showed some of the amazing finds of bronze vessels and chariot burials. Qin spoke about how the research has also provided data on other contemporary cultures that have received less attention than the Shang. A reminder that archaeology has long been used by governing powers who have influence over which interpretations are favoured and disseminated.

In the next sessions Dr Rose Ferraby and Dr Melanie Giles shared their archaeological projects that were centred on creative practice and collaboration. Rose's artwork communicates moments of change amidst long spans of continuity, she plays with ideas of scale, stories and change. In Mel's poetry projects she conveys the complex and intertwined relationships between humans and the natural world. Projects like these empower different ways of seeing and interacting with the past. Art and poetry allow us to play with the fluidity of time and impact how we visualise and see time as archaeologists. I think this creative approach is important in adding to the multiplicity of ways that we present the past, accommodating a wider range of learning styles and neurodivergence. Mel reiterates the vital message

that our understanding of deep time and change in the past is important to inform the present and how we can see these vast environmental stories.

In the final session Dr Jennifer Wexler and Dr Neil Wilkin emphasised exhibitions as a powerful medium of communication and public engagement with academic research. Several recent landmark British Museum exhibitions reveal a resurgence in the visibility and popularity of deep history. In their exhibition 'The World of Stonehenge' they aimed to explore prehistoric communities using techniques of storytelling and enchantment to showcase modern research whilst also challenging enduring stereotypes. They deliberately avoided terms like 'Neolithic' seeking to break down barriers to connection. Their approach both informed and allowed room for creativity offering different perspectives on this deep past.

This thought-provoking day centred the concept of time when interpreting prehistoric communities and also for us. There were recurrent themes around the power of language and the value of embracing creativity, collaboration and different ways of thinking to interpret and present the past. This day school represents a wonderful coming together to share knowledge and ideas and to critically examine how we do archaeology and why. I eagerly await the next in the series where we examine the present before moving onto the future of prehistory.

*Kate Sumnall, Curator of Archaeology, Museum of London*

## Invisible death rites in the early Neolithic: results of archaeoethanatomical analysis of Linearbandkeramik funerary practices

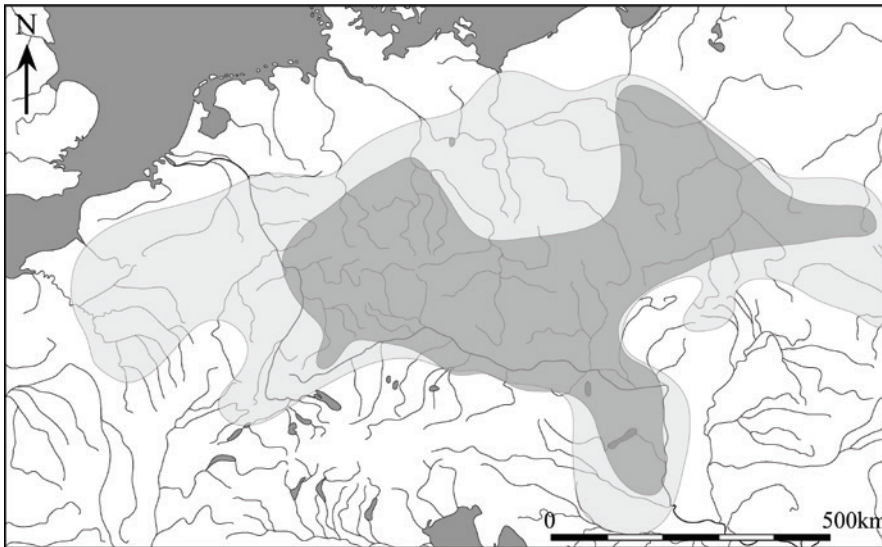
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From just before 5500 cal BC, communities known as the Linearbandkeramik (LBK) culture developed new distinctive pottery styles decorated with incised linear bands in the Carpathian Basin. This culture then spread across central Europe from the middle of 54th century cal BC, bringing with them new ways of burying the dead. LBK people buried their dead in a variety of ways, including at settlements, and from around 5300 cal BC, at cemeteries too. Most inhumations are of single bodies placed in a flexed position, and accompanied by grave goods, such as pottery, stone tools and shell jewellery. Many elements of these burials have been studied to understand LBK society. Isotopic analysis, osteology and increasingly aDNA analyses have been applied, revealing many elements of LBK life, from diet to mobility and kinship. Here, we present the results of a study into LBK treatment of the body after death, applying the technique of archaeoethanatology to published images and photographs of burials. These results suggest new patterns of diversity in treatment at death which may correlate with differences between individual identities.

Archaeoethanatology as a methodology for analysing burials first developed in France during the 1980s. It involves using knowledge from forensic biology and taphonomy to reconstruct burial deposits as they were originally formed, and social theory is used to interpret these results. Whilst the technique was first created with the intention of being used in the field, its framework can be remodelled and applied to existing datasets, if detailed recording and high-quality photographs are available. The use of archaeoethanatology has produced ground-breaking results in recent years, including the identification of evidence for mummification amongst remains from Portuguese Mesolithic middens by Rita Peyroteo Stjerna and her team last year.

Similarly important results have been suggested by the initial application of archaeoethanatology to LBK burials. By applying this technique to records of burials from Vrábce, Slovakia and Balatonszárszó in Hungary, previously invisible elements of funerary treatment have been identified. In around 20% of burials from Balatonszárszó, the body appears to have





Map showing geographical distribution of the LBK. The darker area represents the initial phase of migrations, whilst the lighter shade indicates the spread from 5300 cal BC

been tightly bound before being placed in the ground. The retention of fast decaying connections, as well as the flexion of limbs beyond the range of anatomical possibility, may hint that these bound bodies were being preserved prior to burial. Interestingly, of this group, the majority are older female adults and young children. Whilst individuals from these demographic groups less frequently receive grave goods in burials, this suggests that instead, higher levels of time and care may have been invested in the preparation of their bodies at death.

Another, smaller portion of this sample showed evidence for the deliberate removal of parts of the body, typically the head. Whilst decapitated burials have sometimes been attributed to acts of interpersonal violence, there are no cut marks on the vertebrae to suggest violent decapitation in this dataset. It is thus more likely that the body was heavily decayed to enable the head to be removed. Notably, most recent excavations of a mass grave at Vráble have resulted in the recovery of a further 36 headless bodies, which are yet to be subjected to archaeoanatomical analysis.

The results of this study have several implications for our understanding of LBK funerary practices. Firstly, it is clear that these communities had an expert knowledge of death and its effects on the body. This is reflected in a spectrum of funerary treatments, from preventing decay and attempting to preserve the body, through to allowing extensive decomposition in order to disarticulate remains. The broad range of practices identified in this research suggest that LBK funerary practice, particularly at settlements, was much more protracted and complex than is currently recognised. It is likely that this diversity in treatment would have played an important role in LBK funerary ritual and may have been used to express differences between people. These results provide a new line of enquiry and dimension for understanding LBK mortuary practices.

Whilst the results of this study are promising, further work is needed to explore the extent of 'invisible' funerary treatments and define their role within LBK communities. Recently excavated sites in the eastern distribution of the LBK make ideal candidates for study, as high-quality photographs and

detailed recordings of excavations are available. By applying archaeoanatomology at this wider scale, it will be possible to begin exploring the relationship between these practices and different social and temporal contexts. However, one of the most significant results suggested so far is the presence of possible mummification in the eastern European Neolithic, and whilst archaeoanatomology can aid in identifying this, more forms of evidence are required to support this claim. This is particularly true when discussing burial assemblages from contexts where soft tissue is not preserved. Because of this, a second phase of research is planned, kindly funded by the White Rose Doctoral Training Partnership (WRoCAH).

Histology, the microscopic analysis of tissue, can be used to identify the exact conditions under which decomposition occurred. Samples of bone are studied to identify changes which occur in the bone's microstructure as a result of bacterial bioerosion. Studies of both human and faunal bones from archaeological sites have found associations between patterns of bacterial bioerosion and early taphonomy. One way of explaining these associations is that the bacteria that produce bone bioerosion are associated with soft tissue decomposition, and potentially bodily putrefaction specifically. This means that different funerary treatments which affect the extent to which the bone is exposed to soft tissue decomposition, such as soil burial, mummification, dismemberment or sub-aerial exposure, would produce



Photograph of Burial 289 from Balatonszárszó in situ. The body shows a high degree of flexion in the lower limbs, possibly associated with binding or mummification (Image courtesy of Krisztián Oross)



The mass burial of 36 headless individuals and disarticulated remains discovered during recent excavations at Vrábľe (Image courtesy of Martin Furholt)

characteristic patterns of bacterial bioerosion to the internal bone microstructures. If the structure of the bone is well-preserved and shows evidence that bacterial activity has been halted, this is a strong indicator that a bone had not been exposed to extensive bacterial soft tissue decomposition and therefore may have been mummified prior to burial. This analysis would provide key evidence to support the presence of mummification in the burial record of the LBK. This method has been used effectively to demonstrate mummification practices in the Bronze Age, most famously at the site of Cladh Hallan, South Uist. Samples will be taken from two sites: Vrábľe in Slovakia, and Vedrovice in Czechia. This will include samples of human remains, as well as animal remains, which will be used as a control. Once processed and analysed under the microscope, it will be possible to identify changes to the microstructure of the bone caused by different conditions of decay.

With the body being central to investigation, this research is most significant in its potential contribution to our study of unfurnished burials, which are arguably understudied in funerary assemblages, both within the LBK and beyond. By applying a pioneering approach in which archaeoanatology and histology are combined, the continuation of this research will provide a new methodology for the study of past mortuary practices, including those which have previously been overlooked or considered 'invisible' within the burial record. It may subsequently be possible to suggest that some individuals were subject to complex funerary ritual, including mummification.

These results would hold significant implications for our understanding of how death was negotiated in the past. The funerary processes involved in mummifying a corpse require extensive and repetitive engagement with the dead. This includes frequent handling, cleaning and other treatments, which are carried out over the course of several days or even weeks. If these practices are evidenced in remains at the two sites, this indicates a far longer period of engagement with the corpse than has previously been acknowledged amongst LBK communities. It would also contribute to a growing understanding that the ways in which prehistoric communities engaged with their dead were diverse, intimate, and fundamentally different from our own.

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*Iseabail Wilks (iseabailwilks@alumni.york.ac.uk), Penny Bickle, both University of York; Martin Furholt, Maria Wunderlich, Katharina Fuchs, all Kiel University; Zuzana Hukelova, Institute of Archaeology of the Slovak Academy of Sciences; Zdeněk Tvrdý, Moravské zemské museum, Czechia; and Thomas Booth, Francis Crick Institute*

## Preliminary geoarchaeological survey on a Bronze Age landscape in south-central Sardinia

The Bronze Age period (2200–1000 BC) of Sardinia is characterised by the construction of *nuraghes* – substantial megalithic towers that are dotted across the landscape of the island. Many questions still surround the emergence of these monuments in c. 1800 BC and their eventual decline between 1000 and 800 BC, at the onset of the Iron Age. It is clear, however, that the period of *nuraghes* construction marked a point of social and political complexity during a time of pronounced change across the entire Mediterranean region.

Recent collaborative research by one of the project members suggests that the end of monument building in Bronze Age Sardinia was part of a broader pattern of decline across Europe. Current research seeks to investigate this further by examining the environmental context of this decline

and investigating the potential roles monument building may have had in driving environmental change and their resilience against marked landscape deterioration. Here we report the results of a preliminary landscape survey undertaken between the summer of 2022 and the spring of 2023 which sought to explore environmental conditions and their relationship with the Bronze Age monuments of the Siddi plateau in south-central Sardinia.

The Siddi plateau is a small basaltic plateau that originated during the Lower Pleistocene (2.58–0.78 million years ago). It is situated in the Marmilla region of south-central Sardinia, west of the modern village of Siddi. The horizontal basaltic units, ranging between 10 and 20 m thickness, that form the plateau (known locally as the *Su Pranu* or *Giara*) overlie less

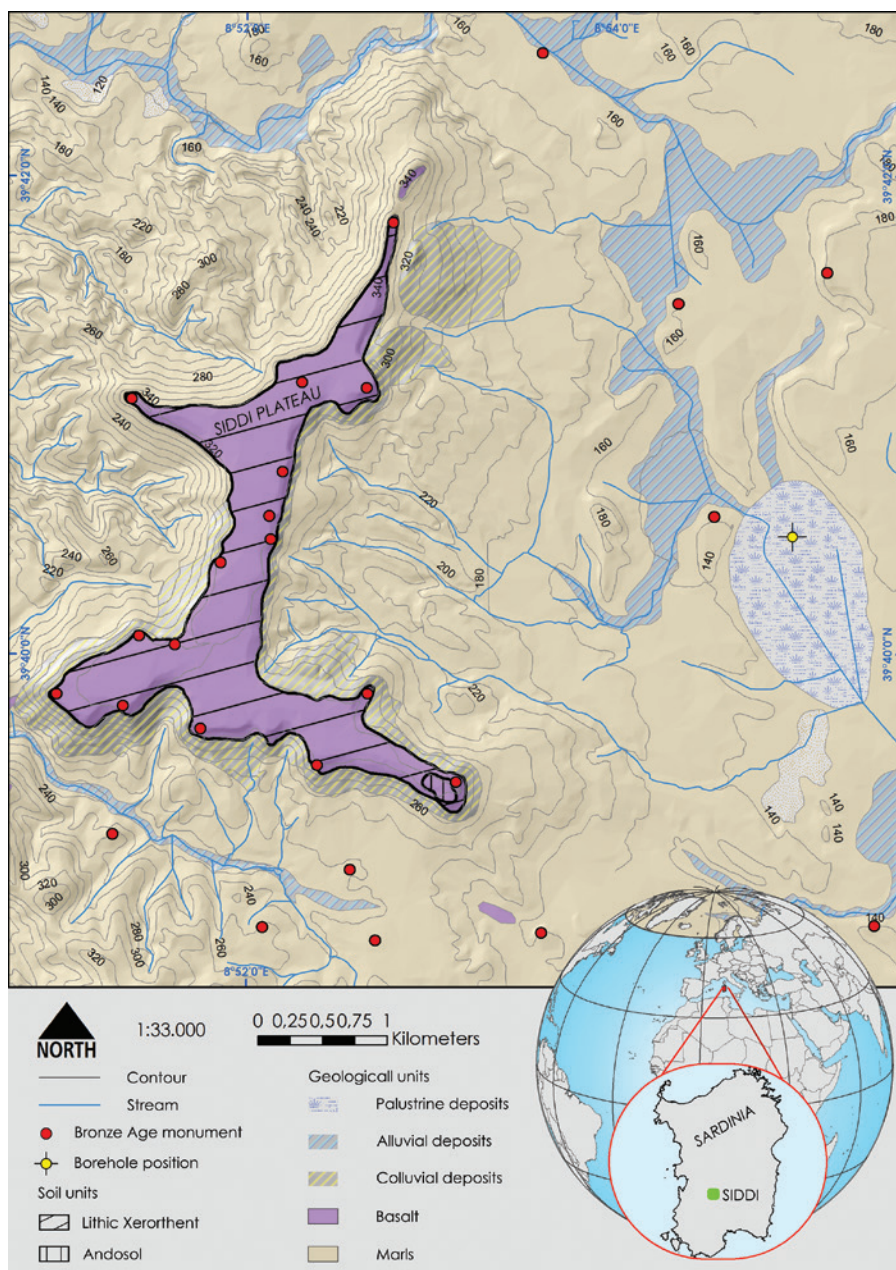


competent Miocene marls and siltstones. In the territory, other Pleistocene basaltic plateaus of much larger size are present, such as the *Giara di Gesturi* and *Giara di Serri*. As prominent features in the landscape, these areas were the setting of intensive human occupation throughout the Bronze and Iron Ages, with some evidence dating back to the Copper Age. The Siddi plateau is home to an extensive Bronze Age monumental landscape comprising 16 *nuraghes* situated along its border, as well as the 'Giant's Tomb' of *Sa Domu e S'Orcu*. Past fieldwork has occurred at some sites on the plateau, most notably at *Nuraghe Sa Fogaia* and the long-running excavations by a Sardinian-American team at *Nuraghe Sa Conca 'e sa Cresia*. Comparatively little work, however, has focused on the landscape history of the area and on the broad environmental impacts of prehistoric human activities.

Preliminary soil and geomorphological surveys were undertaken across the Siddi plateau in order to assess the soil cover and its indirect relationship with the Bronze Age monumental

landscape. By hand-augering and fieldwalking, it was possible to establish the extensive presence of degraded soils across the plateau area. However, an organic-rich, thick soil profile was identified along the south-eastern part of the plateau. Furthermore, hand-augering prospection in the valley to the east below the plateau identified palaeo-marshland deposits that represent an important proxy archive for climate and environmental data with a direct spatial connection with the Bronze Age occupation of the plateau area.

A thin, brown sandy loam soil was identified across all the areas investigated, along with wide areas of bare rock. The profile of this soil was weakly developed, showing only a surface A-horizon not deeper than 30 cm and overlying a R-horizon of indurated, scarcely weathered basalt. These features indicate that it can be classified as a Lithic Xerorthent. Changes in colours from reddish brown to yellowish pale brown suggest hydromorphic conditions in some parts of the plateau, likely stemming from stagnated pools of water. Active erosive processes were also observed, most notably



Geological map of the Siddi plateau, showing the Bronze Age monuments of the region and the soil units mapped during the fieldwork, as well as the borehole location



A) Borehole augering on the valley below the plateau where the fluvial and palustrine deposits were identified. In the background can be seen marly hills bordering the east side of the valley

B) The sediment sequence showing the transition from a palustrine to a fluvial environment

through the identification of fragile soil patches lodged between boulders and blocks, awaiting removal by future thunderstorms. Additionally, we recorded different erosive forms linked to surface run-off across the Siddi plateau, such as concentrations of gravel with no fine materials between them forming an erosion pavement where all the fine fraction has been washed out. Finally, a well-developed soil profile was identified on the south-eastern part of the plateau. This soil was characterised by an organic-rich, 50 to 60 cm thick A-horizon with a clay loam texture and a very dark colour throughout, that developed on basalt. Therefore, this profile proved the existence on the plateau of Andosols, soils that form on volcanic materials and have higher organic matter contents than other soils developed in the same region. These are highly productive soils compared to the Lithic Xerorthent due to the rich organic content bounded with and protected against bio-degradation by aluminium as part of Al-humus complexes, and due to their high capacity of retaining water being permeable and internally well-drained.

Furthermore, geoarchaeological fieldwork on the valley below the plateau allowed us to establish the presence of a thick sedimentary sequence attributable to a palustrine grading to a fluvial environment. The area investigated is a large valley with a flat bottom of a sub-circular shape. It is bordered on the east side by steep marly hills and on the west by fluvial terraces, cut by tributary channels streaming from the slopes of the basaltic plateau. A borehole on the north side of the valley identified a 2 m-thick unit of dark grey silty clay, with common carbonatic nodules. This unit likely originated from low-energy fluvial deposits that were subsequently pedogenised, as testified by the calcareous nodules and fractures on the soil related to the shrinking and swelling of the clay. However, beneath this unit, a pale yellow silty clay deposit, richly mottled by iron and manganese sesquioxides, was found. Interestingly, this sedimentary unit can be attributed to a palaeo-wetland environment, subject to variations in the water level due to alternating wetter and drier periods.

Future work at Siddi aims to further explore the interactions between Bronze Age occupation of the plateau and soil-environmental conditions, along with understanding the impacts of, and response to past climate change by human societies. Particularly, geoarchaeological analyses will focus on the southern part of the plateau to investigate how Bronze Age communities impacted the original soilscape of the plateau. For example, is the Andosol found in this work the relic of a soil cover that originally extended all over the plateau and possibly deteriorated by prehistoric intensive land use? In parallel, fieldwork on the valley downslope of the plateau will aim to retrieve a long, continuous sediment core from the fluvial and palustrine deposits identified. These will be used to acquire the first palaeoclimate and palaeoenvironmental reconstruction for this part of Sardinia by multiproxy analyses (i.e., XRF core scanning; oxygen isotope from biogenic or authigenic palustrine carbonates) that will provide fundamental insight into the environmental and climatic underpinnings on the expansion and decline of Bronze Age in Sardinia and broader Western Mediterranean.

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Gianbattista Marras ([gbm27@cam.ac.uk](mailto:gbm27@cam.ac.uk)), Julia Gustafson, both University of Cambridge, and Eóin W. Parkinson, Queen's University Belfast

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