

# PAST

THE NEWSLETTER OF THE PREHISTORIC SOCIETY



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<http://www.prehistoricsociety.org/>

## A multi-method analysis of springbok dentition to reconstruct South African palaeovegetation changes

The environmental conditions early hominins were subjected to, and how these conditions may have shaped our evolution, is not fully understood. Traditional reconstructions suggest a transition from more closed, wooded, wetter habitats before around 2.5 million years ago (ma), towards a dominance of open, drier, grassland habitats by around 1 ma. Such environmental interpretations led researchers to believe early humans adapted and advanced (e.g. developing bipedalism) in response to the geographic broadening of open landscapes.

Whilst hominin (early human species) fossils are relatively rare, making rigorous scientific analysis directly from them challenging, other species living alongside hominins are preserved in far greater abundance. My research used a commonly-represented antelope genus (the springbok) to identify the shifting habitats of the South African landscape across the Oldowan–Acheulean transition (specifically considering the temporal range from 3–0.5 ma), a crucial period for hominin evolution. During this time, the hominin toolkit became more complex and there appears to have been a wealth of hominin species (*Australopithecus africanus* (e.g. Mrs

Ples), *Australopithecus sediba*, *Paranthropus robustus* and early *Homo*) which lived, adapted and most of which ultimately went extinct. Crucially, the first appearance of our ancestors, the *Homo* genus, occurs in South Africa at this time.

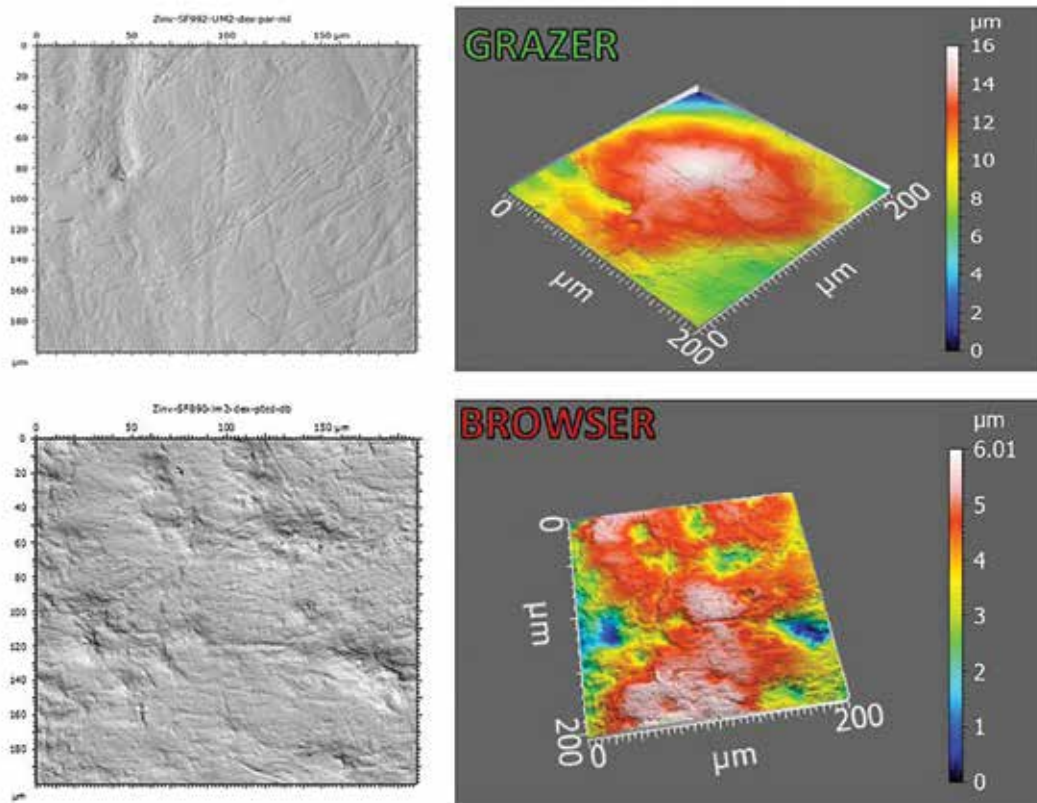
The springbok (genus *Antidorcas*) were one of the most abundant taxa preserved in Plio-Pleistocene South African deposits of the Cradle of Humankind, Gauteng Province, South Africa. As antelopes are herbivores, I was able to use the plentiful fossilised dental remains of the springbok to reconstruct the vegetation conditions present during their lifetime. The South African Cradle of Humankind assemblages incorporate known hominin sites such as Sterkfontein, Swartkrans, Kromdraai and the younger sites of the Rising Star Cave.

Dental microwear texture analysis (DMTA) considers the microscopic imprints left on the dental enamel surface by the vegetation consumed. During mastication, food (vegetation) particles are dragged across the tooth surface, leaving microscopic imprints. These imprints can be investigated



A: Springbok grazing at the Rhino and Lion Nature Reserve within the Cradle of Humankind World Heritage Site. B: Springbok (male) maxillary dentition AZ 3140 in occlusal view (specimen curated at the Ditsong Museum of Natural History, Pretoria). Edited image, original photo: Lucile Crété





Photosimulations of dental microwear texture analysis (DMTA). Left: 2D representation of the enamel surface; right: information on the depth of the microscopic wear. Top: dental enamel microscopic scarring with a typical grazing signal; bottom: a typical browsing signal. Both images are of South African fossil springbok from Sterkfontein and obtained via dental microwear analysis at PALEVOPRIM, CNRS & Université de Poitiers under the guidance of Dr Gildas Merceron

and used to interpret the predominant vegetation types (woodland/forest/savannah/desert etc.) present during the last few days, weeks or months of that animal's lifetime.

Impressions of the teeth were taken using a molding material (as a dentist would to make a gum shield or to fit braces). These molds were then viewed under a high-resolution confocal microscope (Leica Microsystems DCM8 *TRIDENT* at the Paleovoprim lab, CNRS and University of Poitiers, France). The microscope scans the mold of the tooth surface and, using specialist software, numerical values are given to each tooth surface for various traits (including uniformity and direction of wear marks, and depth of wear into the surface). These values allow the researcher to identify an individual or group as a certain feeding type, i.e. grazer (eats predominantly a grass-based diet), browser (consumes mostly leaves, twigs, seeds or fruits) or a mixed-feeder (consuming both graze and browse items). Further inferences can then for instance be made on the nature of mixed-feeding, whether it is mixed on a daily (from meal to meal) or seasonal (summer grazer and winter browser) basis.

The results from the DMTA of the fossil springbok highlighted the extent of variable habitat types, even earlier than was previously assumed. However, the results of the springbok DMTA show springbok were able to consume mainly browse (leaves, fruits, trees etc.) throughout the temporal range of 3–0.5 ma in South Africa. Further, the springbok showed a mixed-feeding diet (eating woodland and grassland vegetation)

throughout, with little indication of a transition to follow the prevailing global and regional environmental conditions. A period of environmental instability around 1.7 ma, in turn, induced dietary variability for springbok individuals, perhaps indicative of increased habitat heterogeneity (with a landscape offering both woodland and grassland habitats). This is likely in response to major climatic changes that are believed to have occurred around this time.

This DMTA study served to highlight that varying habitat types were available in the landscape throughout a crucial time period for hominin and faunal evolution. This supports other studies which show the transition from mostly closed, moist habitats to mostly open, drier, grassland savannah-type habitats was not necessarily as influential an evolutionary force as may have been suggested initially. Species, presumably including hominins, were capable of finding their preferred foods and habitats throughout this period and were perhaps only really challenged when major climate changes induced environmental instability, temporarily calling for greater plasticity in the diet. For hominins inhabiting this landscape, this study can support inferences that only high-impact environmental shifts caused evolutionary change or the need for behavioural adaptations, such as migrations or differential tool manufacture in response to shifting habitats.

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### Erratum

In PAST 91, it was reported that Dr Hannah Cobb had received Society funds for a Mesolithic networking day. Unfortunately, this information was erroneous. We apologize unreservedly for the confusion.

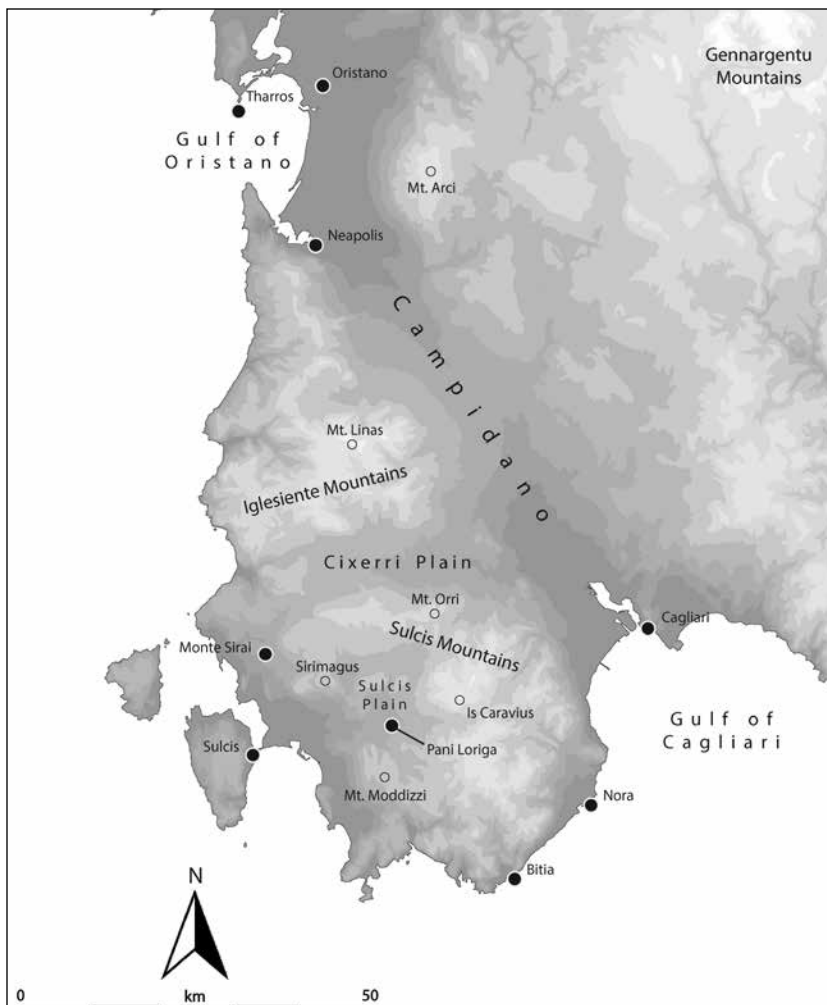
## Landscape Archaeology of Southwest Sardinia

The Landscape Archaeology of Southwest Sardinia project (LASS) is a multi-disciplinary, internationally collaborative project which aims to assess long-term patterns in land use and settlement in the immediate vicinity of eastern Sulcis, in the area of the site of Pani Loriga. There has been justifiable focus in Sardinian archaeology on the role the island has played in bridging the geographical and conceptual gulf between Italy, Spain and North Africa. Consequently, much recent work has focused on major Bronze and Iron Age coastal sites, their hinterlands and their networks. This has, however, meant a relative lack of interest in areas away from major urban sites and the coast. The particular focus of LASS is, then, to investigate how episodic integration into – but also disintegration from – larger economic and political structures (Neolithic obsidian exchange systems, Late Bronze Age trading networks, Iron Age empires, and early modern Spain) drove sociocultural and socioeconomic change in this part of south-western Sardinia.

A central research theme involves contextualizing the important LBA-Punic site of Pani Loriga within the wider landscape. While LASS maintains a diachronic research perspective, we are particularly interested in how the transition from a densely settled LBA landscape to an area apparently focused on and around this large central site

transformed settlement dynamics in the hinterland and how, subsequently, the site's abandonment in the mid first millennium BC drove wider changes in the settlement pattern of eastern Sulcis. LASS achieves these aims via surface survey (quantification of surface artefact material with tight spatial control), geospatial analysis and diachronic documentation. Pedestrian surface survey as a method to locate, quantify and characterise ploughzone ceramic assemblages is now well-established in Mediterranean archaeology, but has not previously been utilised within eastern Sulcis and offers new perspectives on changing patterns in settlement organisation and landscape exploitation. LASS complements this primary method with advanced geospatial data curation and analysis (including kernel density analysis to model the morphologies of ploughzone assemblages), detailed documentation of individual ploughzone assemblages and archaeological features, archival research and integration of available environmental data.

The 2018 LASS season surveyed 80 individual tracts. Tracts are coherent units of the landscape in which vegetation, land use, and topography were broadly comparable, with very large units being subdivided further for spatial control. In this season, tracts were located in two main areas: firstly, in the vicinity of the rolling piedmont near Fontanaluma, to



*Location of Pani Loriga on the south-west tip of Sardinia*



the south of Pani Loriga, on the slopes of Sedda sa Gruxi; and secondly, in the alluvial plain to the east near Santadi Basso. Within tracts, fieldwalkers were spaced 10 m apart and walked in parallel lines. Observing a zone 1 m to either side of their line, fieldwalkers counted all observed artefacts, of which the vast majority were pottery or ceramic building material (tile/brick). Temporally or functionally diagnostic ceramic artefacts (rims, handles, bases or decorated sherds) were collected; any other artefacts (chipped or ground stone, non-modern glass) were also collected and their locations recorded. After processing in GIS, especially dense concentrations of artefacts were defined as 'areas of above-average density' (AAAD). The method adopted allows for a very high degree of spatial control while maximizing efficiency and sampling speed.

The largest and most significant artefact concentrations are:

- AAAD 18-01 (Punic-Modern): Large, dense scatter with storage vessels, fine wares, CBM
- AAAD 18-02 (LBA-Modern): Varied scatter of material near Santadi Basso
- AAAD 18-03 (Phoenician, Late Roman): 7th century and Late Roman material

Of these three concentrations, AAAD 18-01 contains material that can be securely dated to the Punic and Roman phases. This affirms a pattern tentatively identified in 2017, namely that in the hinterland of Pani Loriga a series of small rural sites appear following the decline of the main centre and continuing into the Roman period. This broadly parallels settlement dynamics observed elsewhere on the island, particularly around Oristano, where the Maryland-Wesleyan survey, the Riu Mannu survey, and the Terralba project describe the same phenomenon. The complicating factor in Sulcis is the 4th century BC decline of the major center at Pani Loriga; how should the florescence of rural settlement be understood in this context? Moreover, it is challenging to understand how this florescence relates to Punic imperial



*Team fieldwalking in 2018*

interest in western and southern Sardinia, which has usually been dated prior to the 4th century. It is nonetheless interesting to note that our results are not unprecedented in terms of Late Iron Age dense rural occupation.

#### *Acknowledgements*

We thank Sabrina Cisci, Fausto Martino and Maura Piccau of the Soprintendenza per i Beni Archeologici per le province di Cagliari e Oristano and Elio Sundas, Mayor of the Comune di Santadi, for their kind assistance and permission to undertake fieldwork. Massimo Botto, Nicola Sanna, Remo Forresu, Peter van Dommelen, John F. Cherry, Cyprian Broodbank, Vangelio Kiriati and the Museo Civico di Santadi have variously offered intellectual and practical advice and logistical support, for which we are very grateful. As well as by the Prehistoric Society, LASS is funded by the McDonald Institute for Archaeological Research and Homerton College, University of Cambridge. The 2019 season will be funded by Florida State University.

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## Early Neolithic land use and chronology in south-west Germany

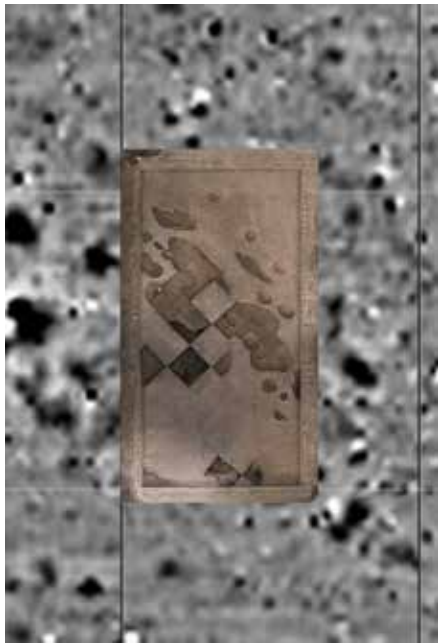
In 2017, the Institute of Prehistory, Early History and Medieval Archaeology at Tübingen University and the State Office for the Preservation of Monuments Baden-Württemberg began new fieldwork at two Early Neolithic Linearbandkeramik (LBK) sites in the Tübingen area, south-west Germany. Excavation and geophysical surveys at various Early Neolithic sites in the Ammer river valley aim to provide new data on the settlement patterns and material culture of the first permanent settlements, and the absolute chronology of this earliest phase of Neolithic life in south-west Germany. Accompanying palaeoecological studies provide a better understanding of how the first farmers and herders influenced the natural environment.

The region is situated on the south-western periphery of the overall distribution area of the Earliest LBK. Seven sites

with ceramics from this initial phase are situated there. Five of these have also yielded material of the pre-Neolithic La Hoguette group, thought to be among the oldest pottery-producing cultural groups in western central Europe.

In 2017 and 2018 excavations and geophysical surveys took place in two LBK sites near Ammerbuch-Entringen and Ammerbuch-Pfäffingen, previously known mainly from surface finds and very limited rescue excavation. In Ammerbuch-Entringen 'Unteres Feld', the trench was placed in the zone containing LBK long houses indicated by the geophysical survey. Despite considerable erosion on the site, a representative quantity of decorated LBK pottery was recovered from the long pits parallel to the houses. As different ceramic styles were retrieved from features in stratigraphic sequence, statistical modelling of the

*Ammerbuch-Entringen 'Unteres Feld'. Orthophoto and geophysics of the excavation trench with the pits alongside Middle and Late LBK longhouses (T. Beutelspacher, LAD)*



*Ammerbuch-Entringen 'Unteres Feld'. LBK pottery of the Middle (left) and Late phases (H. Jensen, University of Tübingen)*

An excavation trench covering both parts of the settlement and a section of the southern ditch aimed to provide insight into the construction, age and significance of the ditch, as well as uncovering settlement and house features. Features belonging to the Earliest LBK (Meier-Arendt's LBK I) did not occur in the excavated zone, but are known from a 1960s rescue excavation.

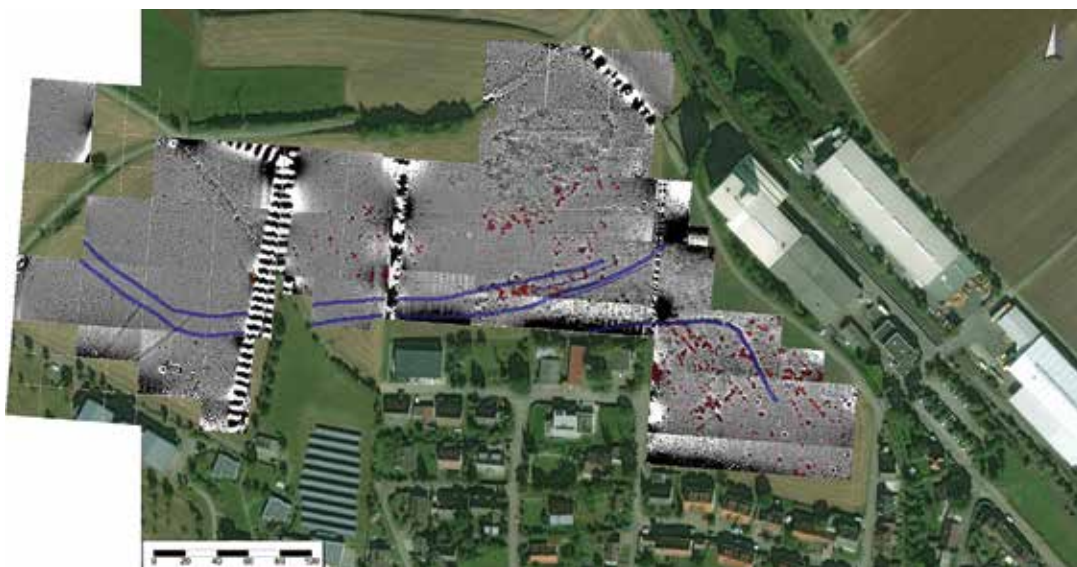
radiocarbon samples obtained from these contexts is possible. The material from this site dates from the Early/Middle to the Later LBK (Maier-Arendt stages II–IV).

Only a few kilometres away from this first site, a large Early and Middle Neolithic settlement at Ammerbuch-Pfäffingen 'Lüsse' has been known since the 1920s. Since Earliest and Early LBK (stage I and II, according to Meier-Arendt) was present at the site, a large-scale geophysical survey was carried out in 2017 and 2018.

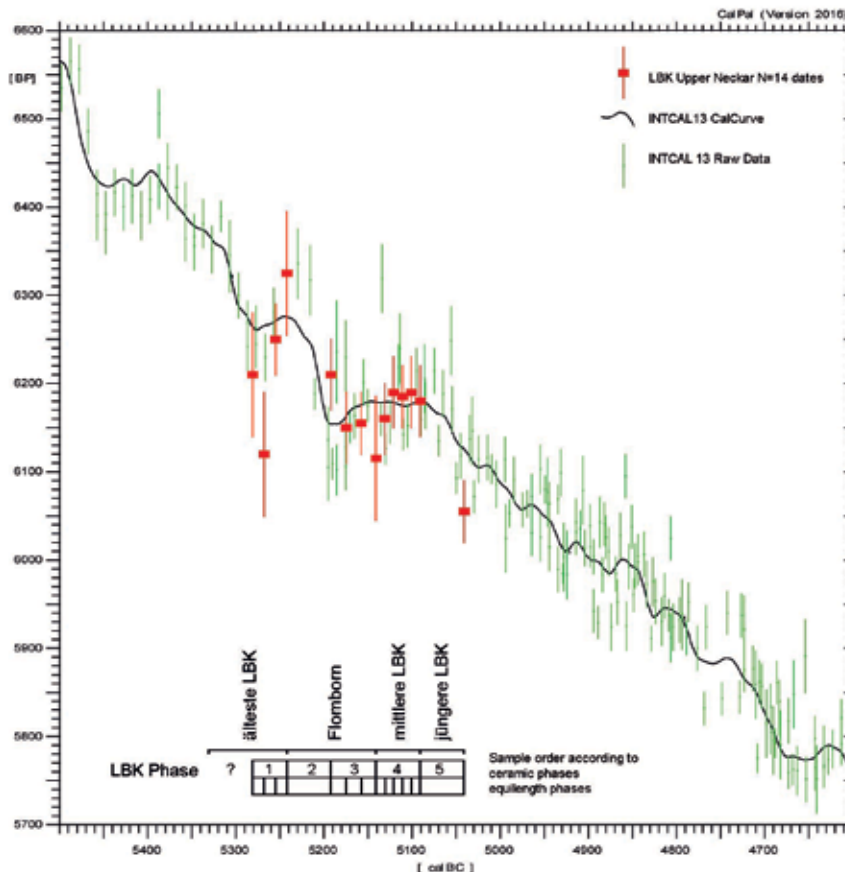
Beside the evidence for various LBK longhouses, the magnetogram revealed several exceptionally large ditches. The segment of a first ditch in the south of the prospected area has so far been recorded to a length of 80 m and seems to be part of a village enclosure. There is also a system of double ditches crossing the area. It curves slightly from east to west and seems to enclose a much larger area than the first feature.

Another surprise was the discovery of several human remains scattered in the ditch fill. Initially, the isolated skull of an adult male individual was recovered just above the base of the trench. Close to the edge of the trench, the complete skeleton of a child, buried in a crouched position, was excavated. The position of the grave suggests a regular burial dug into the side of the still open ditch, a situation not uncommon for LBK settlements. Neither individual showed traces of violence. Because of the limited extent of the excavated zone, the context of these human remains is difficult to interpret. Are we dealing with a regular cemetery, like the one excavated in the ditch of the LBK village at Vaihingen/Enz? Or is this evidence for a catastrophic event in the LBK II village?

The stratigraphic relationships observed so far and an initial characterisation of the finds have provided the basis for an age model of regional settlement history, integrating the



*Large-scale geophysical mapping of the settlement at Ammerbuch-Pfäffingen 'Lüsse'. The ditches are clearly visible, as are the NW–SE-oriented LBK houses in the south-east part of the plan. (P. Zidarov, University of Tübingen)*



*Gaussian Monte Carlo Wiggle Sequencing of radiocarbon dates from Early Neolithic settlements in the Ammer valley on the calibration curve INTCAL 13, using CalPal (version 2017)*

available  $^{14}\text{C}$  dates according to their stratigraphic position and association with chronologically relevant find material. The male skull and the child skeleton, as well as the bones of a red deer and a charred cereal store were sampled. This series of short-lived material is supplemented by an already existing animal bone date from earlier excavations by S. Albert. The chronological model is therefore not based on juxtaposition of the calibrated  $^{14}\text{C}$  ages, but solely on the temporal order of the  $^{14}\text{C}$  samples, as based on their specific archaeological associations. In order to ensure a connection of the chronological series to earlier and later parts of the LBK sequence, we included two further samples from Rottenburg 'Fröbelweg' and six from Ammerbuch-Entringen.

A first result of our chronological modelling is a suggested beginning of stage II of the LBK (Flomborn) around 5240 cal BC. The ditch was dug some time later and backfilled around 5170 cal BC at the latest. Shortly before, the child previously buried in the side of the ditch and the adult skull fell into the fill. Inclusion of the Entringen date series allows a determination of the end of the Middle LBK in this region around 5090 cal BC.

Thus, we have taken the first steps to secure the dating of various Early Neolithic sites and their use on a scientific basis, obtaining a reliable foundation for the reconstruction of the settlement history of the first sedentary societies in

the Upper Neckar and Ammer river valleys. Additional  $^{14}\text{C}$  samples have already been commissioned to further secure the validity of the present chronological model. Our results are relevant beyond the region, since further stylistic comparisons of pottery will allow a more precise determination of the beginning of farming in central Europe more widely. Ultimately, it appears, what we are dating is the arrival of the first LBK farmers from the south-east.

#### *Acknowledgments*

We would like to thank the landowners, Anita Laux, Fritz Laux, Willi Maisch and Martin Bahlinger, for permitting and supporting our field research and the excavations, the DFG and the Land of Baden-Württemberg for financial support and the local authorities from the municipality of Ammerbuch for their help. The autumn campaign of the Pfäffingen excavation was supervised by Lennart Brandtstätter and staffed by archaeology students from the University of Tübingen. Petar Zidarov (Tübingen University) led the geophysical survey work, the drone was flown by Thomas Beutelsbacher (State Office for the Preservation of Monuments Baden-Württemberg) and Philippe Kluge (eScience Center, University of Tübingen).

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# Exploring the long-term anthropisation of the Cantabrian Mountains since later prehistory in Babia, León (NW Iberia)

Higher mountains rising above the horizon generally conjure up ideas concerning wilderness and marginality. Indeed, uplands are still considered some of the last 'natural landscapes' in Europe, where anthropogenic transformations arrived later and more superficially than in the lowlands. However, recent archaeological investigations carried out in some European mountain ranges emphasise that alpine and subalpine grasslands in the shadow of the highest peaks are actually the result of long-term interactions between societies and the environment. In 2017, a pilot project started in the Cantabrian Mountains (north-west Iberia) aiming to identify past anthropogenic pressure on high-mountain areas and to assess the historical processes related to anthropisation in different chronological periods.

There is a void in the regional archaeological knowledge available for upland areas in north-west Iberia. Following the successful outcome of investigations in other European mountainous areas, a research project has been designed to produce new archaeological data from upland areas in Babia (León, Spain). We aim to build up new narratives based on archaeological evidence that will complement current interpretations, which are predominantly based on palaeoenvironmental datasets from natural deposits. Overall, we intend to examine the diachronic anthropisation of upland landscapes since later prehistory, recognising the human agency behind these processes. This perspective will allow us to understand the social and cultural contexts in which interactions between societies and the environment were established. The results from 2017 and 2018 fieldwork in Babia are promising, having identified more than 100

sites related to seasonal activities between 1600 and 2000 m a.s.l. and ranging from the Early Bronze Age to the 20th century. The long-term impact of herding activities in the social construction of upland cultural landscapes might constitute the most relevant process in the exploitation of these areas throughout history.

The archaeological potential of the study area was initially assessed using aerial imagery and airborne LiDAR datasets. Anthropogenic features were identified and digitised using a GIS package in order to establish preliminary targets for later research stages. Many elements of potential archaeological interest were found: drystone pastoralist structures were easily visible in the grasslands using aerial imagery, while some possible prehistoric burial mounds and trenches from the Spanish Civil War (1936–1939) were identified by looking at Digital Elevation Models (DEM) obtained from airborne LiDAR data.

The study area was divided into nine polygons, within which we conducted archaeological surveys at the sites we had identified. We described their characteristics and their relationship with surrounding elements of the landscape (pasture areas, paths, streams, mountain passes, nearby sites). We also covered more extensive areas looking for previously undetected structures through remote sensing and produced site plans. The resulting inventory guided the selection of the locations for further investigation through geophysics and excavation. Field-walking was conducted where visibility allowed, particularly where the surface was exposed by erosion processes, to establish potential dating and functions for the structures we observed.

Once all the survey polygons had been explored, some locations were selected for small-scale gradiometer survey using a hand-held *Bartington Dual Grad 601*. We targeted sites showing diverse typologies and location patterns where seasonal pastoralist occupations from different periods had been recognised. Magnetic contrasts in local limestone



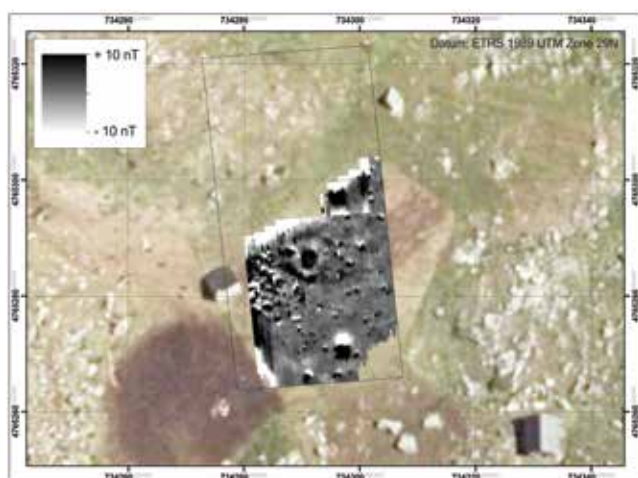
Sources: Esri, USGS, NOAA

Location of the study area (white square) in the Cantabrian Mountains





Pastoralism still shapes upland landscapes in Babia, as large transhumant flocks of sheep still come every summer from hundreds of kilometres away (a). All structures found during field surveys are documented with GPS (b). Geophysical surveys were conducted to identify buried structures (c), while some sites were explored with test-pits, here La Malvosa de La Cervata (d)



Processed gradiometer data from the summer farm of Las Verdes, at 1600 m a.s.l., near Torre de Babia. A potential round shepherd's hut (unnoticeable on the surface) lies just a few meters away from a cabin currently used by transhumant shepherds and other disused drystone enclosures

geology were sometimes sufficient for detecting buried archaeological features, resulting in the identification of some stone structures shown as negative anomalies. However, the results were often challenging to interpret due to a low-contrast environment, the ephemeral nature of the occupation and the small size of surveyable areas in the uplands. The sites with possible buried limestone structures all showed signs of being long-term occupation foci, with upstanding features from several periods and signs of re-occupation and re-use. We also tested large-scale magnetic

susceptibility survey at one location using a Bartington MS2 with D field loop, but results were complicated to interpret due to the co-presence of archaeological sites and modern-day summer farms, which produce thick layers of animal dung over large areas.

Archaeological excavations constituted the last research stage, aiming to assess the chronology and function for a sample of the explored sites. We have excavated 14 small test pits so far, including drystone huts, animal pens, caves and rock shelters. This resulted in the identification of seasonal pastoralist sites ranging from the Early Bronze Age to the 20th century. Further investigations, including new test pits, open-area excavations and more extensive palaeoenvironmental and radiocarbon sampling, will hopefully reveal chronological patterning in site locations or typologies. These data will provide archaeological narratives concerning the adaptation of human groups to upland environs during different periods.

#### Acknowledgements

Fieldwork was supported by the Institute of Heritage Sciences (Incipit), Spanish National Research Council (CSIC) and Durham University; the Prehistoric Society; the Instituto Leonés de Cultura, Diputación Provincial de León; the Cabrillanes Local Council; and the Rosemary Cramp Fund.

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## Statement of financial activities for the year ended 31 December 2018

	2018	2017
	£	£
<b><i>Income</i></b>		
Income from donations and legacies	33,615	36,627
<b>Income from charitable activities:</b>		
Publication grants	1,389	2,538
Copyright fees	33	180
Publications	19,212	21,737
Conferences	12,143	10,812
Other income	95	–
Investment income	6,179	6,404
<b>Total income</b>	<b>72,666</b>	<b>78,298</b>
<b><i>Expenditure</i></b>		
Expenditure on raising funds	8,108	7,722
<b>Expenditure on charitable activities:</b>		
Grants	10,767	10,272
Education support	–	72
Lectures	1,279	560
Proceedings	23,616	20,514
PAST	6,010	3,921
Research Papers	1,022	–
Conferences	16,524	15,456
Expenditure on governance	12,149	9,131
<b>Total expenditure</b>	<b>79,475</b>	<b>67,648</b>
<b>Net (expenditure)/income</b>	<b>(6,809)</b>	<b>10,650</b>
Total funds at 1 January	227,250	213,510
Unrealised investment (losses)/gains	(6,319)	3,090
<b>Total funds at 31 December</b>	<b>214,122</b>	<b>227,250</b>

The Statement of Financial Activities is an extract from the full accounts of the Society. Copies of the full accounts for 2018 are available on the website or can be obtained from Tessa Machling at the registered office.

### ***Report of the Treasurer***

The Society's accounts remain reasonably healthy despite some adverse conditions. Costs have again risen in a number of areas related to running costs, particularly in room hire and travel expenses, although we continue to be vigilant in these areas. Administrative and governance costs have however remained stable, and we continue to ensure that this is a small proportion of our outgoings. We continue to benefit from income from royalties from CUP in respect of institutional subscriptions, although we have not earned as much this

year from online back copies. Individual membership and voluntary income (subscriptions and donations) remains stable. Our investments have performed reasonably on the income they provided, although not as well as prior to 2016. Our reserves remain healthy with an increased proportion easily accessible. The cash position continues to be healthy and in 2018 the Society was able to maintain an increased budget for grants. Our assistance continues for conferences and events not organised by the Prehistoric Society and we again increased partnerships in this area.

## Programme of meetings 2019–2020

<i>Date</i>	<i>Venue</i>	<i>Details</i>
Sun 28 July 2019	Avebury, Wiltshire	<b>Prehistoric Society Grand Day Out</b> Tour of excavations at Avebury, led by Prof Josh Pollard and Prof Mark Gillings. Directions and details will be posted on the website. <b>To book this event, please email <a href="mailto:prehistoric@ucl.ac.uk">prehistoric@ucl.ac.uk</a></b>
Sat 21 Sept. 2019, 2pm	<b>Lecture</b> City Museum, Leeds	<i>Who were Britain's first farmers? The genetics of the British Neolithic</i> by Dr Tom Booth, Natural History Museum Joint Yorkshire Archaeological Society / Prehistoric Society annual lecture
Mon 7 Oct. 2019	<b>Lecture</b> Room LG17, Law Faculty building, Sidgwick Site, West Road, Cambridge	<i>Long Before Brexit</i> by Dr Alison Sheridan, National Museums Scotland Joint Cambridge Antiquarian Society / Prehistoric Society annual lecture
Saturday 26 Oct. 2019, 9:30am	<b>Day conference</b> National Museum of Scotland, Edinburgh	<b>Crafting Identities: New Research on Later Prehistoric Finds</b> Later Prehistoric Finds Group conference
Wed 30 Oct. 2019, 5pm	<b>Lecture</b> Society of Antiquaries, Burlington House, Piccadilly, London	<b>The 18th Sara Champion Memorial Lecture</b> <i>Fragments of the Bronze Age. Destruction, deposition and personhood</i> by Dr Matthew G. Knight, National Museums Scotland. Followed by free wine reception and presentation of the Society Undergraduate Dissertation Prize
Saturday 2 Nov. 2019	<b>Lecture</b> Norwich Castle Museum, Castle Meadow, Norwich	<i>Title tbc</i> by Dr Chantal Conneller, Newcastle University Joint Norwich and Norfolk Archaeological Society / Prehistoric Society annual lecture
Sat 9 Nov. 2019, 8.45am – 5.45pm	<b>Conference</b> Bournemouth University	<b>Sunrise Over the Stones: Recent Research into Neolithic and Chalcolithic Wessex</b> CBA Wessex Day Conference
Fri 15 Nov. 2019, 7:30pm	<b>Lecture</b> United Reform Church, Church Road, Welwyn Garden City	<i>The First Britons? Mesolithic evidence from Starr Carr</i> by Dr Don Henderson, University of York Joint Welwyn Archaeological Society / Prehistoric Society lecture
Mon 18 Nov. 2019, 7:30pm	<b>Lecture</b> Scarborough Library, Vernon Rd, Scarborough	<i>Between Avebury and Stonehenge. The Neolithic monuments of the Pewsey Vale</i> by Dr Jim Leary, University of York Annual joint Scarborough Archaeological and Historical Society / Prehistoric Society lecture
Tues 19 Nov. 2019, 7:30pm	<b>Lecture</b> Rutland County Museum, Catmos St, Oakham	<i>Ötzi – the life, death and environment of a Prehistoric glacier mummy</i> by Prof Klaus Oeggl, Innsbruck University
Weds 20 Nov. 2019, 7:30pm	Queen Victoria Hall, 7 West St, Oundle, Peterborough	Inaugural joint Leicester Archaeological and Historical Society / Prehistoric Society lecture, in collaboration with Leicestershire Fieldworkers and Middle Nene Archaeological Group, allowing Prof. Oeggl to offer his lecture in multiple locations over three days.
Thurs 21 Nov. 2019, 7:30pm	George Davies Centre, University of Leicester, 15 Lancaster Road, Leicester	
Fri 22 Nov. 2019	<b>Lecture</b> Tullie House Museum & Art Gallery, Carlisle	<i>Putting the prehistory of the north Pennines on the map: discoveries made during English Heritage's 'Miner – Farmer Landscapes'</i> by Dr Alastair Oswald, University of York Inaugural Joint Cumberland and Westmorland Antiquarian and Archaeological Society/Prehistoric Society lecture. Please book in advance by emailing <a href="mailto:timpadley@googlemail.com">timpadley@googlemail.com</a> or calling 01228 545249 and leaving a message
Fri/Sat 22/23 Nov. 2019	<b>Conference</b> University of Worcester	<b>Neolithic and Early Bronze Age Research Student Symposium</b> Supported by the Prehistoric Society For further details, please visit: <a href="https://nebarss.wordpress.com/">https://nebarss.wordpress.com/</a>
Weds 22 Jan. 2020	<b>Lecture</b> Devon County Hall, Topsham Road, Exeter	<i>Stonehenge – new discoveries</i> , by Prof Mike Parker Pearson, University College London Joint Devon Archaeological Society / Prehistoric Society annual lecture
Sat 15 Feb. 2020	<b>Day School</b> Society of Antiquaries, Burlington House, Piccadilly, London	<b>Landscapes of the Dead: Exploring Neolithic monuments and mortuary practice</b> A booking form will be included in the autumn issue of PAST
Mon 9 March 2020	<b>Lecture</b> National Museum of Scotland, Edinburgh	<b>Biennial Joint Society of Antiquaries of Scotland Lecture</b> <i>Title tbc</i> , by Prof Annelou van Gijn, Leiden University
Fri 19 – Sun 20 June 2020	<b>Day conference &amp; Europa lecture</b> University of Leicester	<b>Europa conference 2020</b> The recipient of the 2020 Europa Prize is Prof Colin Haselgrove, University of Leicester. Further details of the event and a booking form will be posted online and advertised in PAST in due course.

For updates on all events, and further details as they become available, please see our Events page at <http://www.prehistoricsociety.org/events/>

## Landscapes of the Dead: Exploring Bronze Age Barrowscapes

Bronze Age round barrows are central to prehistoric research in Britain and further afield, yet there is still so much more to explore and to understand about them. The Prehistoric Society's 'Exploring Bronze Age Barrowscapes' dayschool at the Society of Antiquaries, Burlington House, London, on 16 March 2019 was the first in a series of three 'Landscapes of the Dead' spring conferences. The packed meeting room was treated to a string of excellent and engaging presentations that spanned the whole of Britain and ranged from details of the specific practices at one round barrow, to patterning visible across wide areas.

The day began with Andy Jones' (Cornwall Archaeological Unit) important questioning of the primary role of round barrows as funerary monuments, particularly in south-west Britain. Focusing on the evidence from Dartmoor, where formal burials at round barrows and cairns are rare, it is clear that monuments were a focus for ceremonial practices during which a range of special deposits were made. Drawing together the findings of excavations by humans and badgers (!) over at least 120 years, Jonathan Last (Historic England) traced subtle links between deposits made from the Early Neolithic to the Middle Bronze Age at Barrow Clump, near Stonehenge, highlighting a long-term emphasis on child burials and on flint. Stuart Needham then showcased wider findings from the hugely productive 'People of the Heath' community project, centred on the Rother Valley, Hampshire/Sussex borders (<http://www.peopleoftheheath.com/>). The results of detailed LiDAR image analysis and ground survey revealed that different communities drew on a broad set of ideas about how to locate, build and use barrows, but expressed these ideas in particular ways.

After lunch, the discussion moved north-westwards, with Jane Kenney (Gwynedd Archaeological Trust) summarising the unique character of the extensively excavated barrowscape on Holy Island, Anglesey. Here, round barrows with clustered cist cemeteries form just one of a range of Bronze Age ceremonial monuments. The substantial history of Early Bronze Age barrow investigations in Northumberland, with around 150 sites excavated, allowed Chris Fowler (University of Newcastle) to elicit the complex histories and wider associations of these sites. Simple cists with Beaker-associated burials were embellished over extended time periods. Some were also revisited, and their contents redistributed. Groups of barrows accumulated near rock carvings, ultimately forming alignments that echoed the orientation of nearby Late Neolithic monument complexes. The emergence of linear round barrow arrangements was also a central theme

of Paul Garwood's (University of Birmingham) presentation. This topic has not received detailed analytical attention at a wide level and very few barrow groups have been investigated in recent times. Despite their linear arrangement in plan, barrow groupings sometimes developed in a distinctly non-linear fashion – later barrows were inserted into existing lines and there were lengthy gaps in the building sequence. The role of linear cemeteries as markers of pathways across the landscape and as a medium for expressing Bronze Age historical accounts was explored.

Matter within and beneath round barrows was the focus of the last two talks by members of the AHRC-funded Grave Goods project (<https://blogs.reading.ac.uk/grave-goods/>). Presenting the 'understory', Catriona Gibson (University of Reading) examined the seemingly widespread practice of revisiting southern British Beaker-associated burials. Human remains and objects were added, rearranged, removed and redistributed. This habit perhaps prompted the construction of barrow mounds that effectively sealed these places off. Moving on to the 'overstory', Neil Wilkin (British Museum) illuminated the important role of 'complex' Early Bronze Age round barrow cemeteries. At these sites, contrasting funerary rites were used and deposits of objects with varied origins were made within a restricted time period. Hybrid Food Vessels, with wide-ranging influences in terms of their form and decoration, also feature strongly in these contexts. Complex cemeteries that brought together mutable practices and object types may have been key settings for negotiating social change.

One simple but important point to take from the day was the sheer complexity and variety of Bronze Age barrowscapes (and barrows). Beyond this, key themes were the extent to which barrow-related activity can reveal the make-up and mobility of Bronze Age communities; the practicalities and interpretative consequences of evidence that the Bronze Age dead were revisited and skeletal elements circulated amongst the living over extended periods; and the significant scope for further detailed investigation of barrow groupings.

Burlington House's infamous ticking clocks brought the lively final discussion to an official close at 5 pm. However the conversations continued well beyond this into the pub. Many thanks are due to Stuart Needham, who organised and introduced it all! The next 'Landscapes of the Dead' event in March 2020 will focus on 'Exploring Neolithic Monuments and Mortuary Practice'.

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The Devil's Jumps, West Sussex  
(image: Stuart Needham)



## An OASIS for prehistoric studies

OASIS is a data capture form through which archaeological and heritage practitioners can provide information about their investigations to local Historic Environment Records (HERs) and respective national heritage bodies. As well as being an information-gathering medium, the OASIS records also allow the practitioner/contractor to upload reports for the HERs to access, and for release in the Archaeology Data Service (ADS) library.

The current form dates back to 2004, initially for use in England and latterly for Scotland and the maritime zone of Wales. OASIS contains over 30,000 records, with nearly 50,000 reports transferred into the ADS Library. Although a major success, the time is now right for the system to be rebuilt to accommodate a wider range of workflows, facilitate efficient public access to reports, and link digital and physical resources. The redevelopment of the form is a key part of Historic England's Heritage Information Access Strategy (HIAS), with additional funding from Historic Environment Scotland to support reporting to Archaeology Scotland's annual summary of fieldwork, *Discovery and excavation in Scotland*. The new OASIS system will allow Welsh HERs to copy their records and reports into the library, and it is hoped that the form will also be used for projects within Northern Ireland.

The redevelopment is now actively underway, and the new form is due for public rollout after March 2020. The form

is open to all types of project, including those undertaken by higher education bodies or local research societies. To encourage a high uptake by the archaeological community, the new form aims to:

- Create a modern interface that reduces the amount of time to record a project
- Use modern technology to increase accuracy
- Reduce duplication of effort
- Expedite transfer of unpublished reports in the ADS Library for public access

Specifically, the new version will allow the user to:

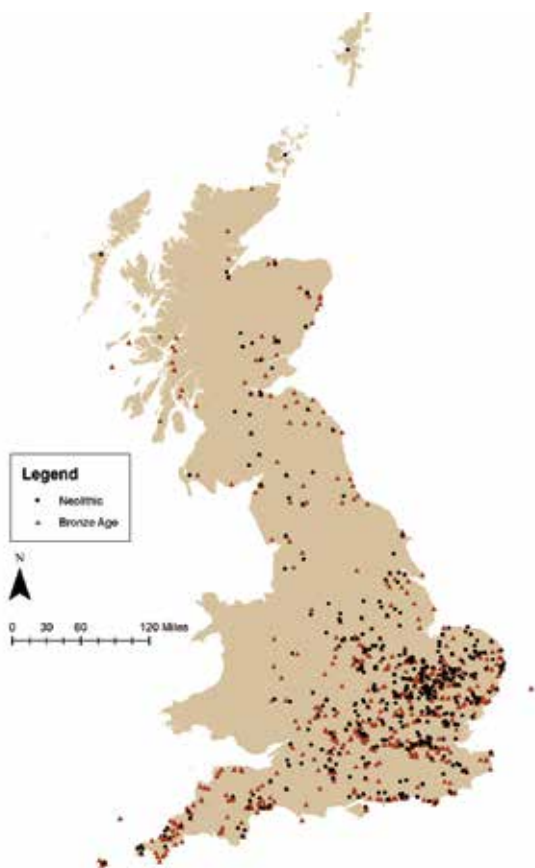
- Use current standards for the recording of events, objects and monuments, allowing records to be cross-searched consistently and accurately
- Record projects using accurate spatial metadata
- Record the location of physical and digital archives, with links to museum holdings
- Incorporate and link to the new generation of research frameworks in England and Scotland
- Record published resources
- Efficiently transfer reports into the ADS Library, and provide accurate citation via Digital Object Identifiers

At the time of writing, submissions through OASIS have contributed over 3000 reports on sites and finds, including 100+ on the Palaeolithic, 300+ concerning the Mesolithic, 500+ for the Neolithic, 900+ on the Bronze Age and over 1200 relating to the Iron Age.

These reports (freely available under the ADS Terms and Conditions of use) represent a broad range of projects, from large-scale excavations to smaller evaluative works and surveys, and cover the gamut of site types and finds from across UK Prehistory. These include studies of submerged prehistoric landscapes (<https://doi.org/10.5284/1046430> <https://doi.org/10.5284/1051477>), Late Mesolithic flint assemblages (<https://doi.org/10.5284/1007523>) and hut circles (<https://doi.org/10.5284/1049230>), Neolithic cursus monuments (<https://doi.org/10.5284/1045493>) and burnt mounds (<https://doi.org/10.5284/1030807>), Bronze Age barrows (<https://doi.org/10.5284/1034333>) and pit alignments (<https://doi.org/10.5284/1034931>), and Iron Age Crannogs (<https://doi.org/10.5284/1008364>) and hillforts (<https://doi.org/10.5284/1049371>). It is hoped that with the successful redevelopment, OASIS will facilitate information exchange between the various research, commercial and curatorial sectors, allow for increased access to records and reports by the wider community and thus encourage a new wave of innovative research and understanding.

More information on the redevelopment can be found on the OASIS website (<https://oasis.ac.uk/>), which features a blog (<https://archaeologydataservice.ac.uk/blog/oasis/>) regularly updated with news and information on the project. Alternatively, if you wish to find out more about OASIS, including how to register as a test user, please contact Tim Evans at the address below.

Tim Evans, Archaeology Data Service, University of York  
([herald@ads.ac.uk](mailto:herald@ads.ac.uk))



Distribution of OASIS reports containing results relevant to the study of the Neolithic and Bronze Age

## Proud of ‘doing different’ in Earlier Bronze Age West Norfolk. Revisiting Seahenge twenty years on

*‘Doing different’* is a Norfolk motto and very much a current saying. Being an archaeologist from Norfolk, I’ve always felt this saying was and is very appropriate to the story and the interpretation of Seahenge, the timber circle known as Holme I, found on Holme-next-the-Sea Beach, West Norfolk, in 1998. A recent conference (*Seahenge 2018: a conference to celebrate the Bronze Age timber circle*; held 10 November 2018 in King’s Lynn) explored the interpretation of Seahenge and its sister timber circle, Holme II, thereby marking this 20 year anniversary and celebrating the installation of the timber circle in the refurbished Lynn Museum.

The organising committee was composed of key stakeholders: the Norfolk Historic Environment Service, Norfolk Museums Service and the West Norfolk and King’s Lynn Archaeological Society. Each group had been involved with the recording, monitoring, presentation and display of this unique piece of West Norfolk archaeology.

A central aim for the conference was to enable a much wider discussion on the context of the discovery than had previously been raised in print, moving beyond discovery and the attendant controversy of preservation by excavation, on to interpretation. Speakers would be encouraged to place the evidence in a broader national and international context.

Nicely, the list of speakers brought together professional archaeologists, local amateurs involved in discovering archaeology and international academics, all under one roof. The welcome speeches included Francis Pryor (Leicester), who stressed the difficulty of excavation and recording in the inter-tidal zone, accomplished by Mark Brennard, Maisie Taylor and their team in 1999. Given the richness of Later Bronze Age metalwork, he also suggested that this part of the West Norfolk coast could be considered an emerging ritual landscape, with the unique Seahenge monuments perhaps

used as burial or excarnation sites. John Lorimer, a local man, recounted his surprise on finding artefacts and then timbers while crabbing on Holme beach in late 1998, which he duly reported to the county archaeologists. He enlivened his talk by showing finds from Holme: flint flakes, Bronze Age pottery and wood, still in seawater and plastic boxes. The audience were then invited to visit the Seahenge exhibition and more recent finds collected from the beach by John Lorimer, as well as attending a lecture by David Robertson (formerly of Norfolk Historic Environment Service), who focused on the methodology for the monitoring of Holme Beach after 1999 – including the Late Bronze Age trackways, further finds scatters and Saxon fish traps.

After a light lunch, a second session of presentations included Debbie Harris (Norfolk Museums Service) presenting on the conservation of Seahenge, from beach, to water tanks (Flag Fen and at the Mary Rose Trust, Portsmouth) and back again for installation at Lynn Museum. The oak stump in particular required bespoke harnessing and engineering solutions to stabilize it and safely display its axe-cut wood surfaces. Peter Bray (Oxford) discussed the social importance of the axes used to cut down and shape the central stump and split timbers. The size and shape of the axes suggest social and trade links far beyond the British shores, showing that West Norfolk was at this time well connected to Bronze Age elites and at the forefront of technological innovation. Nick Thorpe (Winchester) focused on Seahenge in its European context, taking his cue from the genetic and isotopic evidence for mobility in this period. The circular enclosed monument, artefact deposition and burial/excarnation (exposure) of bodies were all shared Europe-wide cultural traditions, as was a preoccupation with the sun. This is the true European Earlier Bronze Age context of Seahenge I and II. A panel discussion with audience questions then centred on the intractable question of ‘what it all means’.



The lecture room, Marriott’s Warehouse Trust, filling up. Note selected speakers in the front row (left to right): John Lorimer, Francis Pryor, Nick Thorpe; standing at front: David Robertson (Photo: C.J. Bond 2018)

Whilst there can be no one interpretation of this special place on Holme Beach in 2049 BC, it is an important place in local community folk memory today. Certainly, this was a unique and most likely sacred place, a prime example of ‘West Norfolk doing different!’ Seahenge I and II may be viewed as a unique funerary monument, mixing local and new European traditions and deploying a new technology on a windswept Norfolk beach.

So, some twenty years on from the discovery, rather than archaeologists and protestors at odds, we all worked together to reflect on its discovery.

#### Acknowledgements

The Seahenge 2018 conference was organised in partnership with colleagues from the Norfolk Museums Service (Oliver Bone, Debbie Harris, Hannah Jackson, Monica Saganowska, Andrew Tullett) and Norfolk Historic Environment Service (Sophie Cabot, David Roberston, Alison Yardy).

*Clive Jonathon Bond, The University of Winchester  
(clivejbond@aol.com) and West Norfolk and King's Lynn  
Archaeological Society*

## Knowle Hill Farm, Dorset, UK. A Chalcolithic (very) cold case?

Excavations in 2016 on Knowle Hill Farm (KHF), Dorset, UK, directed by Martin Green (Down Farm Museum, Dorset) and Joshua Pollard (University of Southampton), investigated features on the southern edge of the Knowlton Neolithic monument complex, in particular a ring-ditch and a pair of parallel features that were considered, from aerial photography, to be the ditches of an anomalously small long barrow. This was confirmed and south-east of the barrow a steep-sided and flat-based grave (F6), 2.5 × 2 m and 0.76 m deep, was also revealed. It contained traces of a substantial wooden chamber/box and disarticulated human remains. Grave goods include an exceptional European Beaker, a stone wristguard, two barbed-and-tanged arrowheads and a fire-lighting kit. A small fragment of copper is likely part of a knife since taken from the grave. A striking feature of the KHF F6 burial is the evidence for trauma consistent with a violent death. It is also possible that the grave was deliberately disturbed.

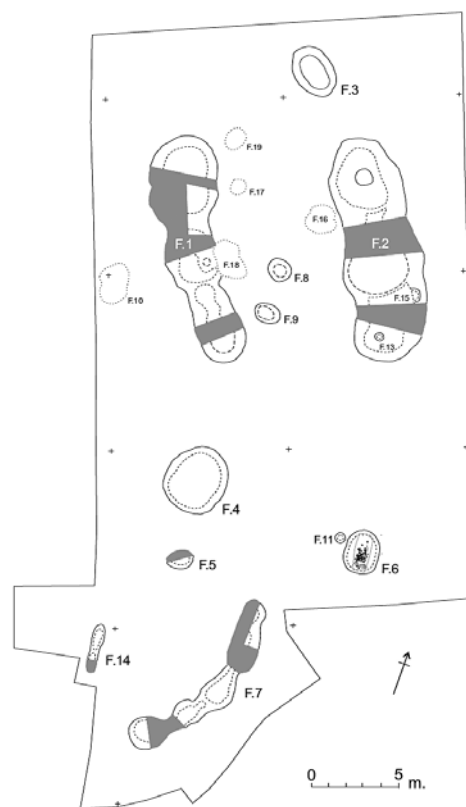
Multidisciplinary lines of inquiry, including radiocarbon dating, 3D microscopy, isotope studies and aDNA, are currently being applied to the study of the KHF F6 individual, the nearly complete skeleton of a robust, tall (c. 1.75 m), roughly 25-year-old male, who was apparently in good health when he died. There is no evidence for pathology. A healing oblique fracture on the distal shaft of the left humerus is consistent with non-lethal injury shortly before death, possibly the result of a fall.

Of particular interest is a deep incision (23 × 1.31 mm, maximum dimensions) on the lesser trochanter of the left femur. The absence of healing is consistent with perimortem trauma. The cutmark was examined using a Keyence VHX-5000 three-dimensional digital microscope. Criteria for sharp force trauma include the presence of an incision with linear loss of substance and well-preserved edges. The profile of the cutmark shows a straight wall, consistent with sharp force injuries inflicted with a metal weapon.

The direction of the incision suggests the stabbing blow was inflicted at the back of the thigh, in a right to left direction,

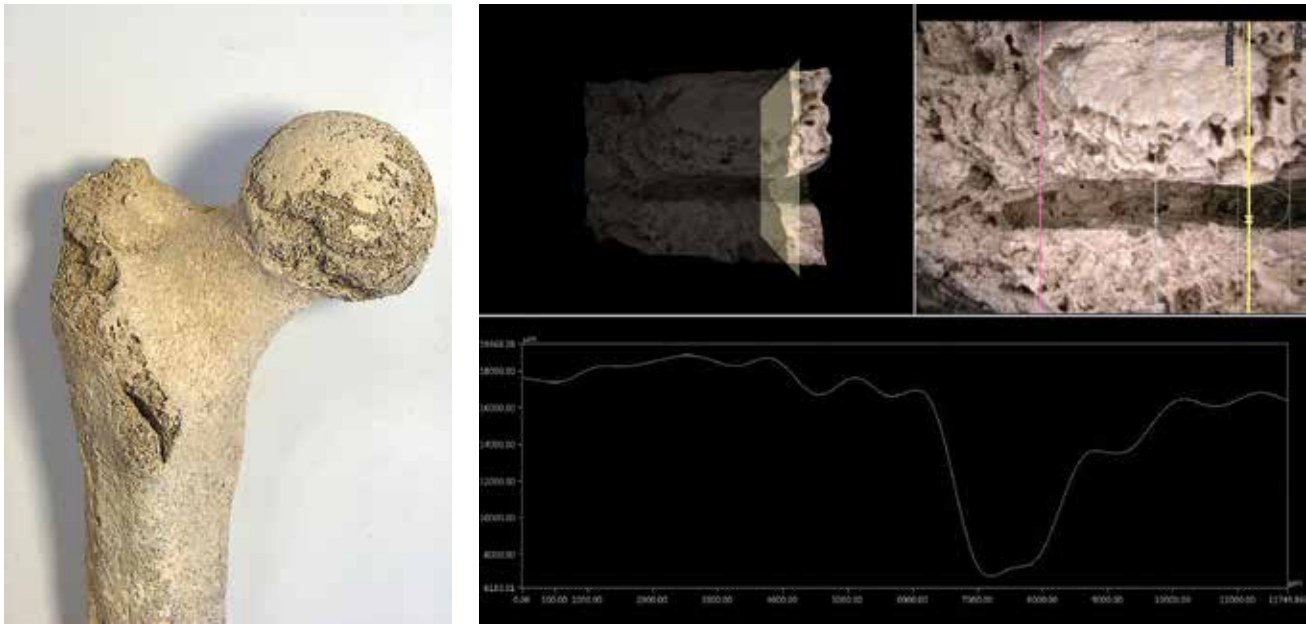
severing the femoral artery. This would have resulted in heavy bleeding and a rapid death. A very cold case of murder!

The body was deposited in a grave within a wooden chamber/box dug in close proximity to the Knowlton monument complex. The choice of location, the quality of the grave goods found in association with the skeletal remains, as well as the apparent good health of the victim when he died, are all elements that converge to provide evidence he may have been a member of an elite group in society and given a burial commensurate with his status.



Site plan. The burial is in feature F6. Drawing: Joshua Pollard





Left femur showing cut-mark on lesser trochanter (left); cutmark profile (above) © Gabrielle Delbarre

Adding post-mortem insult to injury, the disposition of the skeletal remains within the grave suggests that they were subsequently rearranged after the grave was disturbed. Stratigraphic integrity is high and there was no evidence of re-cutting of the grave which could have disturbed the deposit at a much later date. Re-opening of graves is known in the region, for example at Fordington Farm, Dorset, Grave 59 and Chilbolton, Hampshire, Grave 70. In both these burials, disarticulated skeletal remains of Beaker period individuals were found to have been carefully and deliberately re-arranged post-mortem. At Chilbolton, rich grave goods were found in association with the disturbed burial. In these examples, the reopening of the graves and rearrangement of bones may be consistent with creating space for additional later burials and/or possible ceremonial mortuary rites.

By contrast, in the case of KHF F6, many skeletal elements were rearranged and the skull was smashed and scattered. The absence of metal objects from the grave assemblage is also anomalous in comparison with burials containing similar Beaker 'grave goods packages', most notably the Amesbury

Archer. The fine Beaker was also broken. The evidence suggests desecration of the grave and of the body within it. To better contextualise the burial, we were awarded funding for one radiocarbon date by the Prehistoric Society/SUERC and would like to thank both parties. A sample from the right femur gave a result of 2463–2274 and 2256–2208 cal BC at 95.4% probability (3862 ± 34 BP SUERC, 79344), confirming that the burial belongs the early Beaker phase, thus providing particularly early evidence for death caused by a metal weapon, and an early instance of possible grave-robbing or desecration in the Wessex region.

This study is a collaboration between the Universities of Southampton, Bournemouth and Uppsala (Sweden), Down Farm Museum (UK) and Musée de l'Homme, Paris (France).

*Gabrielle Delbarre, Bournemouth University (gdelbarre@bournemouth.ac.uk), Dr Joshua Pollard, Southampton University, Dr Martin Green, Down Farm Museum, Dr Martin Smith, Bournemouth University, Dr Phillip Endicott, Musée de l'Homme and University of Uppsala, Dr Mike Allen, Bournemouth University*

## Mount Chikiani and its obsidian sources: a long-lasting exploitation system

Amongst the many obsidian outcrops of potential use for prehistoric communities who settled in the region that extends between north-western Iran, eastern Anatolia and the Great Caucasus, Mount Chikiani (N 41°28'38.8"; E 43°51'51.9"; 2417 m, Lesser Caucasus of Georgia) is one of the most northerly and was exploited from the Mousterian Middle Palaeolithic to the Iron Age. As far as we know, due to its excellent properties of homogeneity, texture and black

and red spotted colour, Mt. Chikiani obsidian had a wide geographic distribution, covering a radius of c. 500–600 km from the Black Sea coast of the Colchis, in western Georgia, to the Caspian Sea. The effusive activity of the volcano took place between 2.8 and 2.3 million years ago. During this period at least eight main lava flows covered its flanks with rhyolitic magma and, particularly along the northern slope, with obsidian.



Stone platform on which a preliminary reduction of obsidian blocks took place and rough-out of a bifacial spearhead discovered close to it (photographs: P. Biagi, 2018)



Impressive village of two rows of rectangular, apsidal houses (drone photograph: R. Nisbet, 2018)

Recent broad-spectrum research in the territory provided us with new data regarding the geochemical properties of Mt. Chikiani obsidian, based on the Zr–Ba ratio. The analyses were carried out at Centre Ernest-Babelon of the IRAMAT (Orléans, France) by B. Gratuze using a Laser Ablation Inductively Coupled Plasma Mass Spectrometry (LA-ICP-MS). They showed the presence of at least three different compositional groups, one of which was extensively used during the Chalcolithic and Bronze Age Kura-Araxes culture. The new analyses provide us with a sound base for future work aimed to characterise obsidian tools retrieved from the archaeological sites of the entire region.

The most remarkable features discovered during the 2012–2018 surveys conducted by Ca' Foscari University of Venice, in collaboration with Ivane Javakhishvili State University,

Tbilisi, are groups of hundreds of extraction pits that were opened mostly along the northern slope of the mountain between 2149 and 2292 metres of altitude and covering an area of *c.* 1.3 km<sup>2</sup>. They consist of circular or elliptical depressions 2–4 m deep and 5–7 m wide, on the edges of which obsidian knapping by-products (debris, debitage flakes, blades and prismatic/subconical cores) and stone fabricators are frequent. However, on satellite high-resolution photos, many more pits can be observed, altogether numbering more than 500. This figure gives Mt. Chikiani the aspect of a large, intensively exploited prehistoric field, at present the largest known in the Caucasus. Although its chronology still needs to be better defined, its apex should be placed around the third and second millennium cal BC.

Obsidian workshops were also discovered, as well as one circular platform on which preliminary stages of manufacture took place. Apart from the impressive number of debitage products, the tools consist of a few retouched blades, endscrapers and unfinished specimens of arrows and spearheads obtained by bifacial, flat retouch. These latter implements are important for the cultural and chronological attribution of the different workshops and groups of mines.

Due to the harsh winter climate, obsidian exploitation on the slopes would have been possible only during the summer months. According to the study of a pollen core extracted from neighbouring Lake Paravani, during the Bronze Age pine forest cover reached up to *c.* 2300 metres of altitude. Within a radius of *c.* 10 km, the volcano and its surroundings are literally peppered with tombs (heaps of stones and blocks issued from the local geology), a few 'monumental' kurgans (stone and earth mounds with one or two causeways marked by stone rows or corridors), one menhir located at the edge of the extractive area, semi-buried 'villages' made of dozens of stone structures with different characteristics and exceptionally long, north–south and east–west oriented alignments of stone boulders. An Ottoman cemetery testifies to the importance that the road connecting Lake Paravani and Armenia to the west, and the Tsalka and Trialeti plateaus to the east played even in historic times.

It is unfortunate that industrial perlite mines have been opened along the slopes of the mountain during the last four years, including in the area where groups of mines and kurgans are located. In a few years this illegal activity will lead to the disappearance of one of the most important, so far unique archaeological landscapes of the Lesser Caucasus of Georgia.

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The copy date for PAST 93 is the 9th of September 2019. Contributions to Editor, Daniela Hofmann, Institute of Archaeology, History, Cultural Studies and Religion, Bergen University, Norway. Email: Daniela.Hofmann@uib.no. Contributions as e-mail attachments are preferred (either Word or rtf files) but submissions on disc are also accepted. Illustrations can be sent as drawings, prints, tif or jpeg files. The book reviews editor is Pippa Bradley, c/o Wessex Archaeology, Portway House, Old Sarum Park, Salisbury, Wiltshire, SP4 6EB, email: p.bradley@wessexarch.co.uk. Queries over subscriptions and membership should go to the Society administrator Tessa Machling at the London address on page 1.