

Association for Environmental Archaeology

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AEA Newsletter 151

May 2021

Dear members,

This Chair's piece finds me in a somewhat sombre mood reflecting on the news about the Department of Archaeology at the University of Sheffield, UK, and the recommendation by the University Executive Board to close the department and retain only certain areas of research and teaching, including cultural heritage and osteoarchaeology. This will be devastating for environmental archaeology at Sheffield and for the discipline as a whole. The AEA will continue to provide support and campaign to #SaveSheffieldArchaeology. If you want to find out more about how you can help please visit the [Save Sheffield Archaeology website](#).

Archaeology departments at other UK universities are also under threat and there is a general feeling of a gathering storm, with plans to reduce the rate of funding support for archaeology courses a growing concern. Although I understand archaeological science is excluded from this reduced funding plan, there are troubled times ahead even without the challenges of living through a global pandemic and its consequences. Now, more than ever, I appreciate being part of an international research community as embodied in the AEA.

Against this backdrop, we are launching the [AEA membership survey](#). We want to know what you most value about being a member of the AEA, where you would most like us to put our efforts and resources, and how we can best sustain environmental archaeology now and in the future. The survey will run until the end of June and we will also be sharing it via the membership email list. Please do take a few minutes to fill it in and help steer the future direction of the Association.

I also want to update you on changes to our activities and plans as a result of the current COVID-19 situation. Firstly, we have granted 12-month extensions to those awarded small research grants in 2019. Depending on how things progress we will consider further extensions, but ask that awardees contact us early on if they are experiencing difficulties. Secondly, we have decided to delay holding the 42nd AEA conference until spring 2022 at the earliest. As an alternative we are proposing to run an open science skills workshop in the autumn. More about this is included in this [newsletter](#), and questions about what form the workshop should take and what it should cover have been included in the membership survey.

Wishing all our members the very best.

Gill Campbell, May 2021



The AEA's 40th Anniversary conference hosted by Sheffield in 2019

Obituary: Eric Grimm (1951–2020)

Very few Quaternary scientists can claim to have had the level of global impact that Eric Grimm exerted during the course of his career and on into retirement, and fewer still are characterised by the level of humility, diligence and dignity that characterised Eric's *modus operandi*. He was generous in all that he did, non-judgemental, highly meticulous, and held a vision for open and transparent science that was ahead of its time. Eric died on 15 November 2020, at his home in South Dakota, and has left a global community in mourning. His career spanned the period marked by the establishment, growth and application of modern palaeoecology (from the widescale application of radiocarbon dating). Eric obtained his PhD from the University of Minnesota in 1981, and worked at the Illinois State Museum in Springfield, retiring as Director of Science in 2015.

Eric is perhaps known to many as 'Mr Tilia': he was the architect of the first plotting program (TILIA) used to draw biostratigraphic diagrams. For younger research scientists, brought up in an era of readily-available personal computing and software with mouse-click-controlled graphical user interfaces, the notion of producing a plotting diagram for pollen data may seem trivial. It certainly wasn't in the 1980s. Already in the 1980s Eric and his collaborators had recognised the need to easily visualise palynological data, and bring together, harmonise, and analyse datasets across regions to

address big science questions. At the time tools to facilitate this simply didn't exist. TILIA was the solution: it enabled not only the visualisation of a dataset, but also statistical capabilities, and data standardisation. The 1980s was the era of rapid (and usually commercial) developments in computing. It was a hallmark of Eric's philosophy that he immediately made his software available to all palynologists, seeking no financial return or favour. This is the exact spirit of Open Science lauded today (and the subject of the 2021 AEA Spring Meeting), 30 years ago.

TILIA became an important tool for the second of the immense contributions that Eric made to our science. He pioneered the development of open access palaeoecological databases. This was stimulated by the realisation that addressing major research questions required bringing together palynological datasets produced by different labs, and analysing them using standardised methods. Eric's interests at the time were whether timings of major changes in his own pollen sequences (within Minnesota) were replicated at other sites, and whether these could be related to continental-scale climate forcing. His work began in North America, but the value of bringing together pollen data from Europe was quickly realised. Eric was already a well-connected and highly respected scientist, having spent time in Cambridge as a postdoc in 1981–1982. He was pivotal in the establishment of

The ARAUCANA Project

Call for collaborations on zooarchaeological and ancient DNA analysis of neotropical American chickens

The ARAUCANA Project – ‘Archaeological and Anthropological Unravelling of Chickens using ancient DNA in Neotropical America’ – is a new research project co-led by Dr Ophélie Lebrasseur, Dr Pablo Fernández and Prof Ludovic Orlando between the Centre for Anthropobiology and Genomics of Toulouse, CNRS, France ([CAGT](#)) and the Instituto Nacional de Antropología y Pensamiento Latinoamericano (National Institute of Latin American Anthropology and Thought, Argentina ([INAPL](#))). It is funded by the Horizon 2020 Marie Skłodowska-Curie Actions (MSCA).

Nestled within a One Health framework, ARAUCANA combines zooarchaeology, genomics and anthropology to explore the cultural and genetic history of chickens in Neotropical America (comprising the Caribbean, Central and South America) from their introduction on the continent to the present day. We are actively seeking collaborators for this research project, and encourage any interested parties to get in touch!

Background to the project

Neotropical America contributes over a fifth to global poultry production, yet chickens arrived on the continent relatively recently, about 500 years ago. Though details surrounding their European and Polynesian introductions and dispersals throughout Neotropical America remain unclear, chickens have adapted to the diverse local environments and infectious diseases, and are now well-embedded within the continent’s numerous cultures. ARAUCANA aims to investigate the introduction and spread of chickens, as well as the evolution of authentic indigenous traits linked to phenotypes, environmental adaptation, disease resistance and productivity, by characterising the past genetic diversity of Neotropical American chicken populations through time, combined with a comprehensive review of these birds’ relationships with local cultures. Our research will shine new light on the cultural and biological heritage of these domestic birds, whilst informing conservation measures, breed development programs, and food security and safety.

Part 1 – Cultural and genetic history

Prior to DNA sampling, a detailed zooarchaeological record of the bones will be undertaken, including measurements and photos/scans. We will subsequently conduct an initial sequencing round to assess DNA preservation. Provided sufficient endogenous DNA content, this data will – for most individuals – allow us to determine:

- species identification
- biological sex
- mitochondrial genetic diversity.

Through joint input from our team and our collaborators, the zooarchaeological and genetic data is expected to feed back into the wider archaeological context of the site and region, with a particular focus on the dispersal and integration of chickens within these local societies. We aim for this joint collaboration to result in a co-authored publication, either as a stand-alone paper, or as part of a wider zooarchaeological assessment of the site or region depending on our collaborators' wishes.

For an example of the type of article, see Lebrasseur, O. et al. (2021) A zooarchaeological and molecular assessment of ancient chicken remains from Russia, *The Volga River Region Archaeology*, 1(35):216–231

Part 2 – Evolutionary history

For the genetics-focused studies on evolutionary history, samples with sufficient DNA preservation will have their whole genome sequenced, whilst we will target mutations and/or genomic regions of interest for remaining 'promising' samples. This data will help address selected questions such as:

- ancestry
- phenotype
- local environmental adaptation
- resistance to local diseases.

Primarily led by our team but with crucial input from our collaborators, this genetic data will characterise the evolution of the genetic make-up of local chicken populations through time throughout Neotropical America, as well as key genes underlying local environmental adaptation, disease resistance and productivity traits. This will result in a co-authored publication.

Part 3 – Exploratory work on pathogens

Finally, we will conduct an exploratory assessment of pathogens present in the samples based on the initial sequencing round. If pathogens of interest are identified and provided sufficient DNA preservation, targeted capture sequencing will be undertaken, allowing the following questions to be explored:

- past health of chickens
- health and lifestyles of ancient societies
- past demography of a pathogen
- evolutionary history of a pathogen.

The results will be jointly interpreted and co-authored between our team, and our archaeology and epidemiology collaborators.

What are we looking for?

Chicken bone assemblages from across the Caribbean, Central and South America for zooarchaeological assessment. All time periods welcome.

Any element for ancient DNA analyses, with a preference for tibiotarsus and coracoid (please note these are destructive analyses). All time periods welcome.

Not sure if you have chickens in your assemblage?

If you are in possession of a faunal assemblage that you suspect may contain chicken bones but don't have the expertise to confirm their identification, please do get in touch. It may be possible for us to come and conduct the identification for you (whenever travel is once again allowed).

No chickens at your site?

If you have been conducting zooarchaeological research on sites dating from the past 600 years but have no evidence for the presence of chickens, we would still like to hear from you. This type of information can help us map the dispersal of chickens throughout Neotropical America based on their presence/absence at known sites.

For more information on the project, timings and sampling protocols, or if you would like to discuss potential collaboration agreements or samples, please get in touch at adna.araucanaproject@gmail.com

You can also follow ARAUCANA on the following social media platforms: Twitter ([@AraucanaProject](https://twitter.com/AraucanaProject)), Facebook ([Araucana Project](https://www.facebook.com/AraucanaProject)) and Instagram ([araucana_project](https://www.instagram.com/araucana_project))

Many thanks and looking forward to hearing from you,
The ARAUCANA Project Team



Acknowledgements

Ophélie Lebrasseur would like to thank the AEA for the AEA Research Grant 2018 Award which permitted the completion of the pilot study. The ARAUCANA project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 895107.



History of the ARAUCANA Project

The ARAUCANA Project would not have taken flight without the AEA, which very kindly awarded me a Research Grant in 2018 for my research entitled 'An archaeological and genetics approach to the cultural history of chickens in Argentina'. Seventeen chicken bones from five 18th–19th century archaeological sites from the Mendoza and Buenos Aires provinces, Argentina, were subjected to ancient DNA analyses for genetic screening in order to assess their DNA content. Five samples were deemed suitable for deeper sequencing, which will come to complement the current ancient South American chicken genetic dataset (currently comprising eight samples, none of which were from Argentina). These analyses represented the first empirical evaluation of DNA preservation in South American chicken bones; a crucial step prior to the palaeogenomic investigation of chicken archaeological assemblages across the continent. Furthermore, 12 complete bones were CT-scanned. Geometric morphometrics analysis will be undertaken on these 3D models when a larger assemblage is available. The outcome of this pilot study became the springboard to being awarded a Marie Skłodowska-Curie Global Fellowship in February 2020 for a much wider and comprehensive investigation of the cultural and genetic history of chickens on the continent, under the title 'ARAUCAANA'.

Ophélie Lebrasseur



12th International Meeting for Phytolith Research

Towards positive synergies and wider horizons!

In 2021, the 12th IMPR will be carried out in the frame of the 27th annual meeting of the European Association of Archaeologists (EAA). >> <https://www.e-a-a.org//eaa2021>

When / where: 8-11 September 2021 / Kiel (Germany)

What: Several **IMPR-sessions** will cover the topics related to phytolith studies: find the best fit for your research!

How_1: Hybrid meeting (virtual and in person*)

How_2: Check the **registration policy** for participants exclusively interested in IMPR-sessions!

You find all relevant information in the websites of the International Phytolith Society and of the 12th IMPR:

>> <https://phytoliths.org/>

>> https://www.12impr.uni-kiel.de/en?set_language=en

Looking forward to your contribution and to meeting you at the conference!

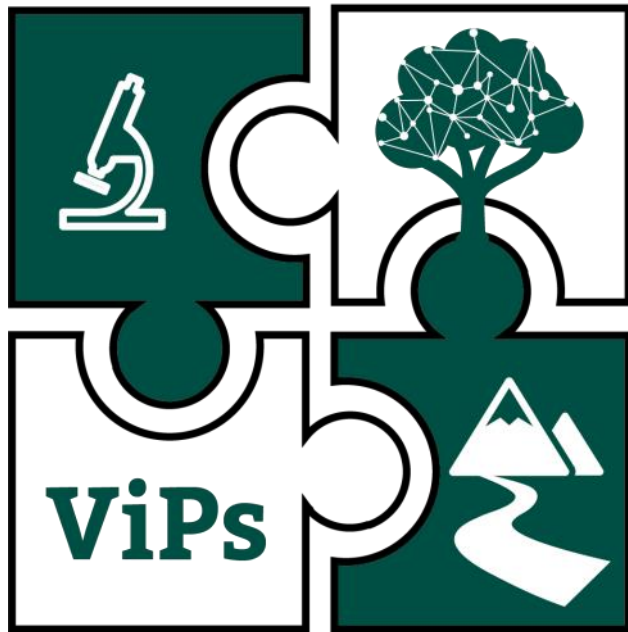
Best wishes, stay healthy,
The 12th IMPR organizing committee

**check the websites for updates!*



Contact:
12impr@email.uni-kiel.de





Virtual Palaeosciences

The **Virtual Palaeosciences** project is a community-led effort to support anyone teaching any aspect of the palaeosciences who is looking to find or create online resources. The project started with a workshop in May 2020, and we've got a lot done over the past year.

As the academic year wraps up, we'd like to invite you all to a short virtual workshop on 17th June (13:00 – 15:30, BST). This is intended as an opportunity to network/discuss virtual teaching with like-minded colleagues and plan for the future - to both review and celebrate what's been achieved by ViPs and to get a wide range of view to help shape plans for activities next year and beyond, and enable everyone to get involved.

For more information and to register, please go to:

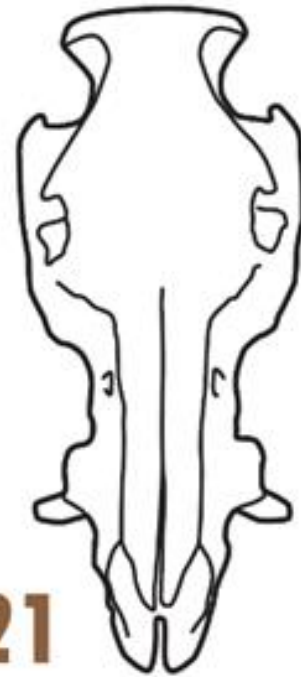
<https://virtualpalaeoscience.wordpress.com/events/vips-third-meeting-one-year-in/>

You can use the same link to share comments if you can't attend, or send them directly by email to m.j.bunting@hull.ac.uk

10th Meeting of the Italian Association of Archaeozoology

Siena, Italy, 3rd–6th November 2021

10° Convegno Nazionale di Archeozoologia **SIENA** 3-6 Novembre 2021



The 10th meeting of the Italian Association of Archaeozoology (AIAZ) will take place on 3rd–6th November 2021 in the Santa Chiara Lab building, University of Siena, Italy (<https://santachiaralab.unisi.it/>). The meeting is a result of the collaboration between AIAZ, the Department of History and Cultural Heritage Studies in Siena, and the nEU-Med Project (Prof. Giovanna Bianchi and Prof. Richard Hodges). Depending on the development of the COVID-19 pandemic, however, the event might have to be moved to a virtual platform, or be held as a hybrid meeting.

Contextualised site-specific analyses, regional reviews, as well as methodological original papers are welcome, although they have to be related to Italy and/or nearby regions of the central Mediterranean.

Oral (20-minute slots) and written (poster) contributions are welcome, in Italian or English. If interested in participating, you can submit your abstract and register to the conference through our new website (www.aiaz.it). Abstracts must contain between 150 and 300 words with five key words.

You can choose to contribute to one or more of the following thematic sessions (session abstracts are available in the website):

1. Methods: new applications and research perspectives
2. Human–environment interactions: ecological and environmental analyses
3. The contribution of archaeozoology to the study of chronological transitions: socio-economic, cultural and environmental aspects
4. Animal products: origins, purposes, and distribution
5. The analysis of faunal remains from high-status contexts
6. Taphonomic studies
7. Animals in ritual and funerary practices (**in memory of Elena Bedini**)
8. The wider picture. The inter-regional integration of archaeozoological data: opportunities, methods and problems
9. Archaeozoology and history: comparison and integration of the evidence
10. Special thematic session. The role of animals in recreational activities and in social display

The deadline for abstract submission is 10th June 2021 [however, remember to check our website for any deadline extension!]. You will have to register for the conference by 31st August 2021. For more information on the venue, conference fee categories, accommodation waivers, related events, publication of the proceedings, and updates on how the COVID-19 pandemic might impact on the conference, please visit www.aiaz.it; important updates, including potential extensions to the deadlines, are also regularly posted on the [AIAZ Facebook Group page](#). For any questions, feel free to email us at segreteria@aiaz.it. We look forward to welcoming you in Siena!

The AIAZ 2021 Organising Committee



Piazza del Campo, Siena, Italy.



AEA

Spring conference 2021

Open Science Practices in Environmental Archaeology

Sensibly delayed by a year, the AEA spring meeting addressed a major challenge and growing area of interest in our field: open access to datasets and publication, among other open science practices. The University of Oxford (or, Zoom managed from various living rooms in the Oxford region) was our gracious host for an appropriately digital day.

Following a welcome and introduction from Amy Bogaard and the conference team, the day began with an illuminating talk by Daniel Stansbie, discussing meta-analysis of data from commercial excavations (and earning my sympathy for having to make sense of 288 different phasing terms for the archaeology of south east England during his DPhil research). One talk down, and already the importance of ontologies was clear. This thread was woven through the rest of the conference, and contributors such as Sam Leggett and Ruth Pelling reinforced the importance of the FAIR guiding principles for data sharing. As The

Turing Way, introduced in a stimulating and incredibly helpful afternoon talk by Emma Karoune, states, FAIR data should be:

“Findable: The first step in (re)using data is to find them! Descriptive metadata (information about the data such as keywords) are essential.

Accessible: Once the user finds the data and software they need to know how to access it. Data could be openly available but it is also possible that authentication and authorisation procedures are necessary.

Interoperable: Data needs to be integrated with other data and interoperate with applications or workflows.

Reusable: Data should be well-described so that they can be used, combined, and extended in different settings.” (The Turing Way Community, 2020)

Speakers explored an impressive

number of initiatives for sharing and accessibly archiving palaeoenvironmental data, including the archaeobotanical database ArboDat developed by Angela Kreuz and now used in the UK by Historic England; the earth and environmental science data publisher PANGAEA; the Strategic Environmental Archaeology Database managed from Umeå; the heritage management data platform Arches, used by David Osborne to establish a Historic Environment Record for Jersey; and IsoMemo and Pandora, initiatives that bring together isotope and other data held in other repositories. Benjamin Irvine and Sam Leggett reflected on data sharing and meta-analyses using isotope data in the Greater Near East and Britain, respectively, and each found there is still some way to go.

The importance of open data for syntheses unsurprisingly formed another key theme of the day, with excellent work presented by Joe Roe on ecological niche modelling in south west Asia, by Jim Morris using aoristic analysis to narrow date ranges in urban zooarchaeology, and by Jesse Wolfhagen estimating age and sex composition of faunal assemblages with an open source algorithm that uses a Bayesian multilevel mixture model. Gayoung Park explored what open datasets can tell us about the environmental and demographic context of technological transition between 49 and 24ka in the Korean peninsula. Paul Flintoft brought us back to the realm of the physical, discussing the question of

how accessible (or even discoverable) palaeoenvironmental archives are in British museums. Final talks reflected on the first five (now in fact seven!) years of the open access journal *Open Quaternary*, and a thoughtful consideration by Elena Marinova, Angela Kreuz and Jeroen Poblome of the issues inherent in turning site-based results into openly available data for broader scientific research.

A number of important points arose throughout the day. In the morning session, Wiebke Kirleis made the key point that there are few opportunities for funding to support ongoing data-sharing schemes. Jessie Woodbridge noted that few in our sector have skills in research data management and curation (as well as introducing us to Straditize, which digitises printed stratigraphic diagrams – for which I will long be grateful), and Emma Karoune raised the question of whether we should be engaging data scientists to ensure our data management is held to the necessarily high standards demanded by open science. Sam Leggett observed that data papers – a growing medium in open science – are often not covered in UK institutions' open access agreements.

A plethora of data repositories were introduced, and while it is welcome to see such a healthy ecosystem of open datasets in our field(s), one may wonder how interoperability features in the design of these different schemes, or indeed whether this might simply

present a bewildering array of options for users and would-be depositors. In this respect, overarching schemes that make locally hosted datasets explorable seem especially welcome.

Open science practices have developed to become an area of expertise in their own right, and workers keen to embrace them both as contributors and users are fortunate to be able to draw on helpful guidance such as The Turing Way; nonetheless there is something of a learning curve here that progressively steepens from concepts such as preregistration of research methods to fully embracing reproducible research in R. Emma Karoune flagged the fact that a survey on open science will be circulated among AEA members, and that there is the very welcome possibility of training in the near future.

Special thanks are due to Lisa Lodwick, Ruby Wu, Tom Maltas, and Tina Roushannafas for bringing this important topic to the AEA, and expertly organising and managing the conference over a longer period than anyone anticipated!

Matt Law

Links to initiatives mentioned in the presentations:

ArboDat - <https://lfd.hessen.de/hessenarch%C3%A4ologie/arch%C3%A4ologische-denkmalpflege/arch%C3%A4obotanik/das-datenarchiv-arbodatt-eine>

Arches - <https://www.archesproject.org/>

IsoArch - <https://isoarch.eu/>

IsoMemo - <https://isomemo.com/>

Neotoma Palaeoecology Database - <https://www.neotomadb.org/>

Open Quaternary – <http://www.openquaternary.com>

Paleoclim - <http://www.paleoclim.org/>

Paleoview - <https://github.com/GlobalEcologyLab/PaleoView/releases>

Pandora - <https://pandoradata.earth/>

PANGAEA - <https://www.pangaea.de/>

Straditize - <https://straditize.readthedocs.io/en/latest/>

Strategic Environmental Archaeology Database - <http://sead.se/>

The Turing Way - <https://the-turing-way.netlify.app/>

References

The Turing Way Community, Becky Arnold, Louise Bowler, Sarah Gibson, Patricia Herterich, Rosie Higman, ... Kirstie Whitaker. (2019, March 25). *The Turing Way: A Handbook for Reproducible Data Science (Version v0.0.4)*. Zenodo. <http://doi.org/10.5281/zenodo.3233986>

AEA Research Grant Winners 2021

We are very pleased to announce the winners of this year's AEA Research Grants:

Sharada Channarayapatna (Archaeological Sciences Centre, Indian Institute of Technology Gandhinagar, Gujarat, India)

Ekaterina Ershova (Department of Ecology and Geography of Plants, Moscow State University, Russia)

Rosalie Hermans (Maritime Cultures Research Institute (MARI) - Vrije Universiteit Brussel, Brussels, Belgium)

Elena Ponomarenko (University of Ottawa and Ecosystem Archaeology Services, Canada) & **Pile Tomson** (Chair of Environmental Protection and Landscape Management, Estonian University of Life Sciences, Estonia)

Claudia Speciale (Facultad de Arqueología e Historia, Universidad de Las Palmas de Gran Canaria, Spain/STEBICEF, Università di Palermo, Italy)

Congratulations to all recipients!

Titles and summaries of all the grant winning projects are listed below:

Sharada Channarayapatna

Palaeoproteomic approach to identifying animal species use for the worked bone industry at the Bronze Age settlement of Dholavira

The Indus Civilization's worked bone assemblages have to date merely been described typologically and largely assumed to have been made from hard animal parts of species that quantitatively dominate the faunal assemblages of the site from where they have been recovered. This has created limitations on further interpreting the socio-economic, cultural and, cognitive mechanisms behind the manufacturing and use of these artefacts, besides looking into their degree of spatiotemporal uniformity or regional variation across the Civilization. Zooarchaeology by Mass Spectrometry (ZooMS) which has recently been found to have effective application in solving this taxonomy-based issue in Archaeozoology, has never been attempted on bone artefacts in India before. Therefore, this pilot project entails two objectives: the starting up of a

first of its kind palaeoproteomic research facility within the premises of the Archaeological Sciences Centre in collaboration with the Biological Engineering laboratory at the Indian Institute of Technology Gandhinagar in India, and the examination of a select corpus of bone and ivory artefacts (n=10 artefacts) from representative chrono-cultural contexts from the Indus Civilization site of Dholavira, a site located on the western margins of India. By combining macroscopic observations of these artefacts, the available literature on them, and the ZooMS results, an attempt will be made to reconstruct the crucial stages of their chaîne opératoire, i.e. availability and choices of animal species and their skeletal parts made by the ancient humans in crafting these artefacts. A broader implication will be to discern patterns, if they exist, which underline social and economic hierarchical groups within that site and whether they extended any variable influence on the access to raw material, manufacturing, and utility of bone objects as part of their survival strategies.

Ekaterina Ershova

Signature of trails and drove ways in soils and deposits of the forest-steppe zone

Trails are powerful communication means between humans and the landscapes. Currently, ancient trails are inferred from their traces on satellite images and distributions of archaeological sites. Regardless of the lifetime, each episode of trail utilization is accompanied by the removal of ground cover, soil erosion, and transfer of seeds and propagules by animals and humans. The plant communities of disturbed grounds on and along trails were expanding and changing during the historic period, but it is unknown whether some taxa were established/persisted in trampled grounds long enough to be used as indicators of trampling.

We propose a project that outlines stratigraphical, macrofossil, and palynological markers of drove ways, trails, and trampled grounds in soils of the forest-steppe zone. Stratigraphy, macrofossils, and soil pollen spectra from recent trails and trampled grounds will be used as a reference.

In the forest-steppe zone, trails and drove ways were commonly tied to the gullies that connect river terraces with floodplains. Utilization of trails in these settings resulted in compaction and erosion in convex loci and accumulation of well stratified colluvial fan deposits in depressions within and adjacent to the trails.

Such sequences will be analysed in five sites within Volga and Dnieper river basins. We will (1) identify trampled layers based on their stratigraphy, (2) analyse pollen and macrofossils with the focus on indicators of trampling, (3) compare the indicator taxa in the pollen and seed assemblages, and (4) identify the indicators that are more

ubiquitous or universal. The oldest trampled layers in each site will be radiocarbon dated and synchronized with archaeological cultures of the area.

The sites have been preliminary analysed, and some layers radiocarbon dated. The stratigraphic sequences cover several thousands of years and reveal several episodes of trail utilization divided by its abandonment and afforestation.

Rosalie Hermans

The archaeology of coastal communities an archaeobotanical perspective (phytolith analysis of space and landscape of coastal landing places)

This project contributes to a larger Vrije Universiteit Brussel (VUB) project on the archaeology of coastal communities. It includes the integrated study of the infrastructure, spatial organization, layout and environmental context of hubs of trade and central places and land use through the application of detailed geoarchaeological, microstratigraphic and paleoenvironmental methods.

My research focuses on land use and landscape in the earliest phases and during the development of towns, including medieval Antwerp (Belgium) and Brussels (Belgium) and late Bronze Age Hala Sultan Tekke (Cyprus). I apply phytolith research in combination with geoarchaeology. Phytolith minerals, opal silica 'microskeletons' of plants, are a relatively rarely used proxy in archaeobotanical research in Europe, especially when studied in micromorphological thin section. However, this proxy holds significant innovation potential, not just because of its excellent preservation, but also because it provides direct insights into: a) in the plant assemblages that were locally present in the soil; and b) in combination with thin section analysis, how these plant assemblages were deposited there. As the anatomical distribution of the phytoliths can be observed in soil and sediment thin sections, one can be confident they share a common botanical origin. My PhD aims to contribute to these archaeological questions on land use and landscape by applying innovative phytolith methods. These include:

1. The integration of phytolith analysis and geoarchaeological methods
2. The development of a regional phytolith modern plant-based reference collection for Northern Europe and the Eastern Mediterranean area
3. A pilot study to use confocal microscopy and morphometrical analysis to study the developed reference collection material and the archaeological samples

Elena Ponomarenko & Pile Tomson**Morphological signature of pastoral activities in peatlands of the forest zone**

We propose a project that aims to find a morphological signature of pastoral activities in peatlands. Given the sparsity of meadows in the forest zone, utilization of peatlands for pastures could be widespread from the beginning of livestock husbandry onwards. Currently, several analytical markers of pastoral activities are applied to confirm this type of land use at the site and layer level. However, such high-precision reconstructions are always localized. Morphological indicators of grazing in organic soils would allow surveys for past episodes of pastoral activities at the landscape level and map potential bog pastures that could be further analytically confirmed in selected areas.

Our reconnaissance studies of historical peatland pastures showed that the morphology of grazed layers reflects movement of ungulates that trample and de-stratify peat for the depth of hoof penetration and transfer unsorted mineral particles, up to a fine gravel size, from droveways to peatlands. The depth and shape of the lower contact of de-stratified layers, and the surface morphology of mineral particles are instructional. While the layer boundaries can be seen only in test pits, de-stratification and presence of unsorted mineral particles are visible even in small (<1 cm³) peat samples available from deep augering. The difference between the grazed and other sand-enriched peats can be presented as a dichotomic identification key.

Morphological indicators will be described in documented bog pastures of the 19th century from six sites within two study areas in Estonia and Canada, with Pre-European layers in the latter serving as a 'blank sample' due to the absence of pastoralism. The results will be applied to reconstruct grazing episodes in older layers of the European study sites. The episodes will be correlated with archaeological cultures of the area by radiocarbon dating.

Claudia Speciale**Plants and sulphur: what can archaeobotany tell us about ancient georesources?**

The aim of this project is to obtain new data on $\delta^{34}\text{S}$ values from macro-botanical remains to understand if they can be used as a proxy for sulphur smelting and/or metallurgical activities in the area of the prehistoric site of Case Bastione (Sicily, Italy).

The hut village of Case Bastione is in Central Sicily and its occupation covers the end of the Copper Age and the beginning of Bronze Age (second half of the 3rd mill.–half of the 2nd mill. BC). The area is characterised by the presence of one of the biggest sulphur outcrops of Sicily (around 5 km from the site) that was probably exploited

during prehistory; the sulphur mines were used in the modern era and abandoned around 50 years ago. Nevertheless, sulphur mining is not archaeologically detected so far. A comparison of sulphur values in modern vegetation with prehistoric values will help in understanding the contamination of sulphur activities at the site.

The first isotopic analyses performed on the macrobotanical remains (carbon and nitrogen results are published in Speciale et al. 2020) showed very high values of sulphur. These results will be implemented by the ones obtained through this project to converge into a scientific paper.

Apply for the next round!

Applications for the AEA Small Research Grants are invited once a year, with an application deadline of 28th February.

Applicants are required to complete the application form detailing the total sum requested and breakdown of costs, how the grant will contribute to the overall research project and what the benefits will be. Please send your completed application form to the grants officer at alivarda@icac.cat

All applications must be accompanied by a referee's statement of support.

Enquiries should be directed to the AEA research grants officer, alivarda@icac.cat.

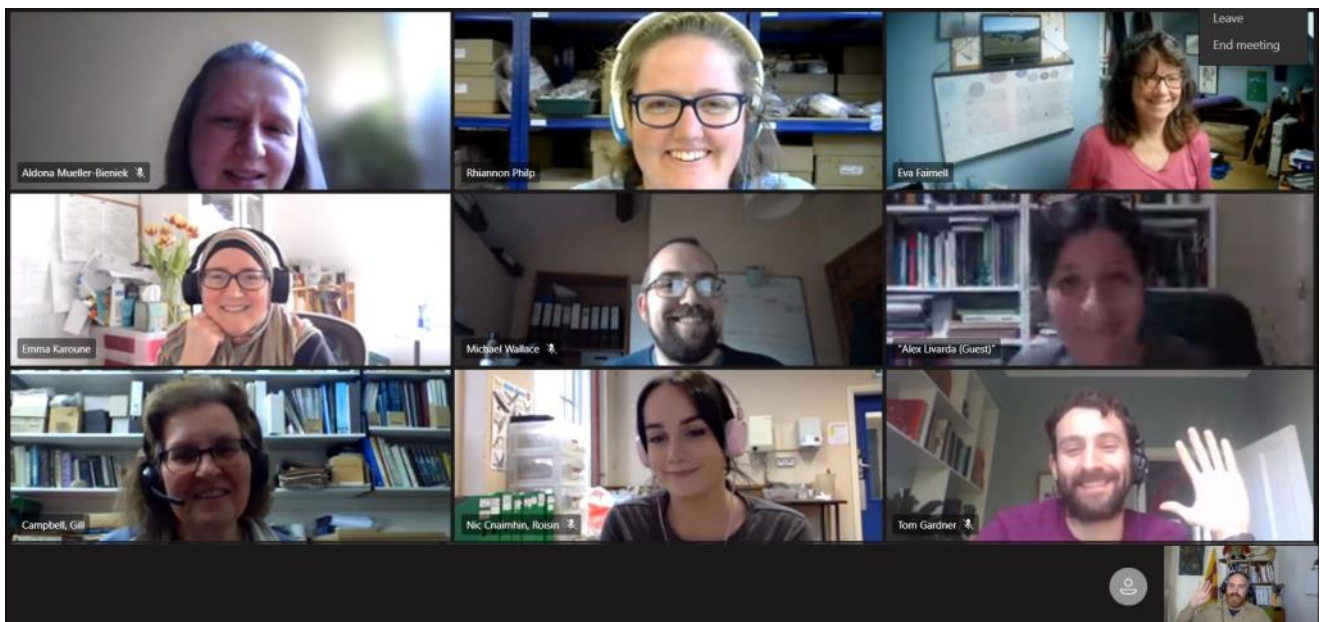
Applications will be assessed by members of the committee and applicants informed of the results of their application by the end of March.

2021 AEA Managing Committee Elections: First Call for Nominations

Elections for new committee members will be held during the Annual General Meeting (AGM) which will be held online. The date and time of the meeting will be published in the next newsletter and communicated to members via email.

This year we are seeking nominations for Chair (four year term), three Ordinary Members (four year terms) and one Student Representative (two year term). If you would like to stand as Chair, an Ordinary Member or Student Representative please apply by emailing Don O'Meara or Gill Campbell: envarch@envarch.net

You will need to provide a personal statement and the names and email addresses of two AEA members who have agreed to nominate and second you. We welcome nominees from any country, but please note that meetings are conducted in English. While we can receive nominations up to the beginning of the AGM, we request that nominations are submitted by 20th July 2021 so that candidates' personal statements can be included in the August newsletter.



More about the roles

Chair

The Chair leads the Association, enacting its mission to promote environmental archaeology worldwide and serving the membership of the AEA and the wider community of environmental archaeologists. The chair does this in close collaboration with the Managing Committee, which meets regularly to identify and debate issues in environmental archaeology and decide on priorities for action. The chair also works with the Secretary, Treasurer and Membership Secretary to ensure smooth running of the Association, in particular they make sure that the AEA's infrastructure is fit for purpose and its finances are well managed.

Ordinary Member

The committee includes 12 elected Ordinary Members who contribute to the management and promotion of the AEA. Ordinary Members sit on review panels for prize and grant decisions and may take on a specific role such as Conference Officer, Grants Officer, Prize Administrator, etc., during their term of office. They help shape the direction and priorities of the Association, from working on policy to building relationships with other organisations.

Student Representative

The committee includes two Student Representatives, with one new Student Representative elected each year. The post is open to both undergraduates and postgraduate students and is an excellent opportunity to get involved with the environmental archaeology community.

AEA Membership Survey and Plans for an Autumn Open Science Skills Workshop

The AEA membership survey

We want to find out your opinions about our Association. There are questions about where you work, where you are based, your opinions of current membership activities and benefits. The survey is completely anonymous and takes about ten minutes.

Please take some time to fill it in and we would like to thank you in advance for your input.

The AEA membership survey can be completed using this link:

<https://forms.gle/HECmFHJCecyW31Nd7>

Autumn event

With the continuing uncertainty over the pandemic, the AEA committee has decided to move our Autumn Conference to Spring 2022. This will hopefully allow us to meet in person, although we foresee that many people will still not want to travel, and therefore a hybrid event is likely to be the best way forward.

Consequently, this autumn there will not be a conference or series of webinars. However, after the success and wonderful discussions at the recent Spring Conference, we are proposing to run an open science skills workshop. This will enable our community to explore many different aspects of open science and learn about tools and resources.

To help us plan the open science workshop, we have added several questions to the end of the AEA membership survey. This is to find out what you want so we can make it as useful as possible.

We want to know:

- What aspects of open science are you interested in learning about?
- How much time can you spend training?
- How can we make the event as accessible and inclusive as possible?

Once the survey responses have come back, we will then provide more information about how and when the open science workshop will proceed.

If you are interested in helping with this event, please contact Emma Karoune – ekaroune@googlemail.com



Trending in Environmental Archaeology



Welcome to our Social Media roundup of all things Environmental Archaeology! Here you will find snapshots from social media selected by our Student Representative to provide a flavour of what has been happening online in the world of Environmental Archaeology during the last quarter.

If you have a particular social media campaign that you would like featured on this page, please email the newsletter editors: newsletter@envarch.net

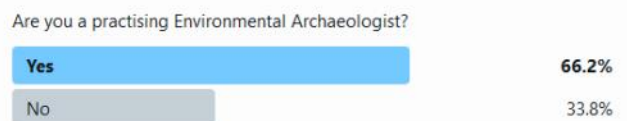


@UniShefArch has had a massive, positive impact on research in environmental **#archaeology** in Britain and beyond, and yet now faces massive cuts. Please see the following link on how you can help: **#SaveSheffieldArchaeology** **@ZooarchLabSheff**



Save Sheffield Archaeology sites.google.com

AEA @Envarch · May 21
We want to collect information about the contribution of **@UniShefArch** to Environmental Archaeology to help make a case for keeping them open. So please answer these 3 questions below.



204 votes · Final results
2 comments · 56 retweets · 21 likes

AEA @Envarch · May 21
Do you have a direct connection to or are you an alumni of Sheffield University?



189 votes · Final results
1 comment · 3 retweets · 1 like

AEA @Envarch · May 21
Are you currently working with a Sheffield alumni?



186 votes · Final results
3 comments · 3 retweets · 3 likes

Association for Environmental Archaeology
24 May at 22:48 · 🌐

The AEA have issued our formal letter to the University of Sheffield in aid of **#savesheffieldarchaeology**. You can read the letter in full on our website: <https://envarch.net/>



Association for Environmental Archaeology
President: Bruce Scallan
Vice President: [Name]
Secretary: [Name]
Treasurer: [Name]
Chair: [Name]
Members: [List]
24 May 2021

Chair of the Department for Archaeology
University of Sheffield
Sheffield S10 2TN
UK

Archaeology was only recently demonstrated when the AEA held its 40th anniversary conference at the University at the end of 2019, with papers covering a wide range of subjects, from atmospheric lead pollution to urban food supply and the sustainability of traditional land management. World-wide, we are facing dramatic climate change, with considerable challenges ahead to meet our targets and achieve the UN's Sustainable Development Goals. Collaboration and investment in research that can address these challenges is paramount, and archaeology at Sheffield is a key player in this research.

Underpinning the department's research pedigree and prestige is an impressive heritage science infrastructure, including the bio-cultural collections it curates and the scientific equipment it manages and can access. Sheffield is already part of a developing dispersed heritage science infrastructure by virtue of the networks that currently exist and the assets it holds. It has the potential to play a substantive role in the development of the European Research Infrastructure for Heritage Science (E-RHS) and RPS-UK. To walk away from these opportunities would be detrimental not only to the department but to the university as a whole.

At the same time there is a critical skills shortage within the archaeological sector. The department's track record for teaching and training archaeologists, in particular archaeological specialists, is extremely highly respected, with online resources, short courses and post-graduate programmes serving to both build capacity for the future and sustain and up-skill the current workforce. Our letter put, conducted over the last few days, had over 200 responses. It showed that over 50% of our followers active in environmental archaeology either have a direct connection with the department or work with a Sheffield alumni. This record speaks for itself. Without Sheffield's provision of professional and knowledgeable practitioners, who are essential to the success of small and medium sized enterprises (SME's), heritage will be put at risk, and opportunities to open to the world and build back better will be lost.

The AEA urges you to adopt option A, to support and invest in the department, to ensure the future of archaeological science not only at Sheffield but in the UK and beyond.

Yours sincerely
Gill Campbell, Chair of the AEA, on behalf of the managing committee

Review of the Department of Archaeology, University of Sheffield

Dear Professor Lamberts

I am writing to you as the Chair of the Association for Environmental Archaeology (AEA) to express the Association's unreserved and wholehearted support for investment in Sheffield's Department of Archaeology, building on its current international standing in environmental archaeology and heritage science, and ensuring it remains a world leader, central to maintaining the UK's soft power in heritage and culture.

The Department of Archaeology at Sheffield has been pivotal to the development of environmental archaeology, a discipline that seeks to understand how people lived in the past and their interaction with the world around them, and in doing so contributes to a better relationship with our planet today and in the future. Environmental archaeology encompasses relatively new areas of study, such as the environmental humanities and environmental history, as well as more established areas, such as climate science, palaeontology and human osteology. Sheffield's central role in environmental

Association for Environmental Archaeology
25 May at 11:48 · 🌐

Global response to #SaveSheffieldArchaeology

- ✓ > 31 800 signatures
- ✓ > 160 Support Letters (Academic Institutions, Museums, Students, Alumni...)
- ✓ > 10 Press articles & Radio interview
- ✓ Green & Labour Parties, House of Lords, Sheffield City Council





Trending in Environmental Archaeology

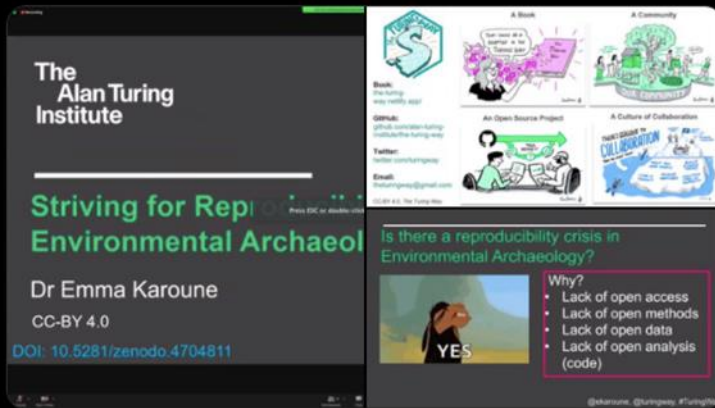


AEA Retweeted



Dr Sam Leggett
@samleggs22

Really fantastic talk by @ekaroune #AEAOpenScience about the reproducibility crisis in #archsci #envarch RN excited to learn more about @turingway & how we can move towards better #OpenScience as a discipline - barriers & action points #datascience #OpenData



Dr Emma Karoune and 3 others

4:09 PM · Apr 24, 2021 · Twitter Web App

AEA Retweeted



Historic Environment Scotland @HistEnvScot · May 4

We've just published our new report and action plan on #equality!

We'll be helping communities all over #Scotland to connect with the heritage on their doorstep and maximise the benefits history has to offer for wellbeing, identity and #MentalHealth.

ow.ly/cQH50EE6G3

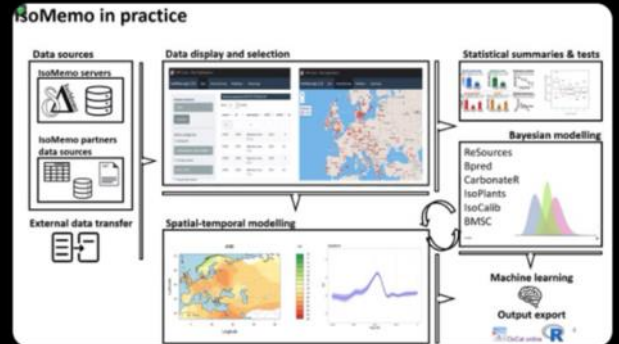


3 replies, 17 retweets, 25 likes

AEA
@Envarch

R package integration in IsoMemo. Great!

#AEAOOpenScience



12:40 PM · Apr 24, 2021 · Twitter Web App

AEA Retweeted
AEA
@Envarch

Just finished our @Envarch committee meeting, discussing issues for the year ahead, and how we can continue to engage with the environmental archaeology community!

@Rioannon @ekaroune @ArchaeoMichael @GillCampbell10 @Roisin_Navin @tomhg1 and @don_o_meara



AEA Retweeted



Dr Lisa-Marie Shillito @ArchaeologyLisa · May 12

How many different phytoliths can you spot? From a Neolithic Swifterbant coprolite! Part of this exciting project led by Dr Lucy Kubiak-Martens biax.nl/nieuws/151



2 replies, 5 retweets, 37 likes



<http://www.envarch.net>

The AEA

The AEA promotes the advancement of the study of human interaction with the environment in the past through archaeology and related disciplines.

We hold annual conferences and other meetings, produce a quarterly newsletter for members, and publish our conference monographs, as well as our journal 'Environmental Archaeology: The journal of human palaeoecology'.

Key Dates

ICAZ Bird Working Group

5th-6th June 2021 (online)

Virtual Palaeosciences Workshop

17th June 2021 (online)

John Evans Prize Submission Deadline

31st July 2021

European Association of Archaeologists Conference

8th-11th September 2021 (online)

AIAZ 2021

3rd-6th November

Notes from the Newsletter Editors

We are always keen to receive newsletter content, especially from our non-UK members. We accept short research pieces, thesis abstracts, conference announcements and calls for papers and are open to other suggestions.

To submit an article, please email word documents and images to:

newsletter@envarch.net

Next deadline: 20th July 2021

Rhiannon Philp and Daisy Spencer

With thanks to our proofreaders Eva Fairnell & Róisín Nic Cnáimhín