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**ΔΟΙΚΗΤΙΚΟ
ΣΥΜΒΟΥΛΙΟ:**

Ι. Μπασιάκος (πρόεδρος),
Γ. Φακορέλλης (αντιπρόεδρος),
Ε. Φιλιππάκη (γραμματέας),
Α. Οικονόμου (ταμίας),
Γ. Θεοδώρου (μέλος),
Π. Λουκοπούλου (μέλος),
Μ. Παπαγεωργίου (μέλος)

Πληροφορίες:

Γ. Φακορέλλης (σύνταξη,
επιλογή ύλης)

E-mail: yfacorel@teiath.gr

Scientific Association, Year
of Establishment 1982,
Headquarters: Kaniggos 27,
106 82 Athens (Association
of Greek Chemists)
<http://archaeometry.org.gr/index.php/en/>

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Information: Y. Facorellis
(editor)

E-mail: yfacorel@teiath.gr

Πληροφοριακό Δελτίο της Ελληνικής Αρχαιομετρικής Εταιρείας

- Φεβρουάριος 2019 -

**Number is the ruler of forms and ideas, and the
cause of gods and demons.**
(Pythagoras)

Newsletter of the Hellenic Society of Archaeometry

- February 2019 -

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ΣΥΝΕΔΡΙΑ - CONFERENCES/WORKSHOPS

9TH INTERNATIONAL SYMPOSIUM RADIOCARBON AND ARCHAEOLOGY, MAY 24-29TH, 2019, ATHENS GEORGIA

Conference Sessions Chaired Sessions

14C and the Protection of Cultural Heritage

Chairs: Tim Jull and Irka Hajdas

This session invites papers on 14C in the protection of cultural heritage. Topics include:

1. 14C of important cultural heritage and their preservation: art works and artifacts;
2. Legal and ethical questions related to 14C dating of material of insecure provenance;
3. Questions of authenticity and provenance.

Time to Eat: Recalibrating Dietary Changes and Domestication in Human History

Chair: Timothy Baumann

Radiocarbon dating has been a primary tool used by archaeologists to understand human dietary patterns and the domestication of plants and animals over time. Recent studies have applied Bayesian statistical analysis to reexamine these dates and create regional models of when and how food/foodways developed, transformed, and spread. These models have then been used to address larger questions on cultural complexity, community and trade networks, conflict and migration, health, climate change, and environmental impact of humans.

Coastal Archaeology

Chair: Susanne Lindauer

Coastal archaeology requires an interdisciplinary approach for a precise chronology and to gain a thorough insight into settlement patterns. Radiocarbon in terrestrial and marine materials plays an important role to provide the temporal aspect of the processes involved. This session invites papers on archaeology at the coast, including reservoir effects and dating of marine and estuarine organisms.

Beyond Site Sequences

Chairs: Seren Griffiths and Derek Hamilton

This session examines how recent developments in the analysis of scientific chronologies have related to archaeological narratives. We would like to consider how much new chronological sequences challenge the structure of archaeological chronological narratives. The session invites papers discussing: how we can use chronological approaches to investigate, critique or challenge pre-existing interpretations rather than replicate them; the challenges in producing narratives that tack between precise chronology and areas of relative imprecision; the tensions in dealing with large datasets,

the legacy of grand narratives and individual sites; and the challenges in relating unique or exceptional sites to wider narratives of change.

Latin American Archaeology

Chair: Kita Macario

The Latin American Archaeology session is intended for the presentation of studies regarding the occupation of Southern and Central Americas. Different time scales and cultures found amongst the pre-colonial archaeological sites distributed all over Latin America are the focus of this session.

Resolving Ambiguities in Calibrated Age Determinations

Chairs: Jennifer Birch and Sturt Manning

Plateaus, reversals, and other “wiggles” in the calibration curve that lead to multiple intercepts and ambiguity of radiocarbon age determinations have led scholars of the recent past to question the utility of radiocarbon dating for such periods. Papers in this session will address strategies for dealing with such “messy” portions of the calibration curve and how contemporary scientific, statistical, and archaeological methodologies are overcoming these challenges. Participants are asked to consider both advances in radiocarbon science and the implications of the derived insights on understandings of the archaeological record in the period in question.

Radiocarbon Laboratories Past & Present

Chair: Jeff Speakman and Alex Cherkinsky

Since the first published application in 1949, radiocarbon dating has been the most widely applied analytical approach for dating archaeological and historical materials. Over the past 70 years, numerous radiocarbon labs have opened and/or closed—each with its own unique history, trajectory, and contribution(s). This session provides a forum for documenting the specific histories of radiocarbon laboratories both, past and present, that have existed over the past 70 years. The purpose of this session is to document in one place, the histories of individual laboratories, their major accomplishments and their major contributions to the field, so that as we look to the future of radiocarbon dating in archaeology, we have documented, to some extent, where we have already been.

Archaeology and the Environment

Chair: Kita Macario

The Archaeology and the Environment session is intended to bring together researchers of environmental sciences who work with archaeological remains. Multidisciplinary studies comprising subjects such as zooarchaeology, past marine reservoir effects, and paleoenvironmental reconstructions are the focus of this session.

General Sessions

Developments in Sample Pretreatment

This session will cover technical advances in radiocarbon dating archaeological samples, including sample evaluation; contamination detection; novel approaches to dealing with

problematic sample types; samples with low carbon concentration; ultra-small samples; and developments in compound-specific approaches.

Peopling of the World

This session invites papers on the timing and pace of human dispersal, migration, and settlement of the major landmasses of the world, from the Middle Paleolithic through the settlement of the last inhabitable islands.

Statistical Analysis and Modeling

This session invites papers on statistical and model-based approaches to interpreting radiocarbon data, such as data simulations, Bayesian chronological modeling, and the interpretation of summed probability distributions.

Calibration and Calibration Records

This session will cover developments in calibration records, including updates on the new IntCal19 curves, regional offsets in tree-ring calibration data, and the incorporation of annual tree-ring data.

Paper and Poster Abstracts Guidelines

Due Date

All abstracts are due by February 15th, 2019

Abstract Length

Abstracts should summarize key findings and should be up to 500 words in length, including references. Figures cannot be added.

Presentation type

Abstracts can be submitted for **oral** or **poster** presentation.

Abstracts submitted for an oral presentation will be considered for a poster presentation if it is not possible to accommodate all the oral submissions.

Submission

Submit your abstract via our online submission portal by clicking the button below.

Once submitted, you cannot make changes to the abstract.

[Submit a presentation abstract!](#)

Please visit the site: https://www.radiocarbonandarchaeology2019.com/abstracts-1?ss_source=sscampaigns&ss_campaign_id=5c54899010165b00012350da&ss_email_id=5c548e4e35c0020001c9f0e5&ss_campaign_name=Abstract+Deadline+in+Two+Weeks&ss_campaign_sent_date=2019-02-01T18%3A22%3A10Z

TECHNART 2019, 7-10 MAY 2019, BRUGGE, BELGIUM: ABSTRACT SUBMISSION PERIOD EXTENDED TO MONDAY 4 FEBRUARY 2019

Dear colleagues,

TECHNART-2019, the European conference on the use of Analytical methods for Characterization of Works of Art, will be organized in the splendid Medieval City of Bruges, Belgium from 7-10 May 2019.

Submitted contributions will be published in a Virtual Special Issue of Microchemical Journal.

See <https://www.uantwerpen.be/en/conferences/technart-2019> for all detailed information.

We are delighted to let you know that we have already received a very substantial (>350) number of abstracts on all topics within the scope of the conference. Thus, TECHNART-2019 is assured to be a very diverse conference with a healthy balance between method-oriented and artifact/material/case-oriented contributions.

Since from different sides, we have received requests to keep the abstracts portal open for a few days more, we have decided to extend the period of abstract submission with ONE WEEK.

For those that have not done this yet: please submit your abstract(s) in the coming days !

Kindly use the template provided on-line at <https://www.uantwerpen.be/en/conferences/technart-2019/call-for-abstracts/>

Important dates:

- **Prolonged abstracts deadline: Monday 4 February 2019**
- Author notification: Friday 15 February 2018
- Final Scientific programme: Friday 22 February 2019
- Early Registration Deadline: Friday 1 March 2019
- Ultimate Registration Deadline: Wednesday 1 May 2019
- Conference: **7-10 May 2019**

On behalf of the organizers,
Koen Janssens,
University of Antwerp

Prof. Koen Janssens
UNIVERSITY OF ANTWERP – Faculty of Sciences – Vice-dean
Department of Chemistry – [AXES Research Group](#)
+ Groenenborgerlaan 171, B-2020 Antwerp, Belgium | Room V1.44

* koen.janssens@uantwerpen.be | (+32 3 265 33 22

 https://www.researchgate.net/profile/Koen_Janssens

25TH ANNUAL MEETING OF THE
EUROPEAN ASSOCIATION OF
ARCHAEOLOGISTS, SEPTEMBER 4-7TH,
BERN, SWITZERLAND

Dear colleagues,

I would like to call your attention to a call for papers for the 25th Annual Meeting of the European Association of Archaeologists 4-7th in Bern Switzerland. Session 274 deals with knowledge transfer between mining communities. We are looking for contributions from not only prehistoric mines, but also in historical time periods, up to modern times. Please feel free to forward the call for papers.

Call for papers is now open - submit your proposal at <https://submissions.e-a-a.org/ea2019> before 14 February 2019, 23:59 CET.

SESSION #274

SESSION TITLE

Knowledge Transfer between Mining Communities

SESSION TEXT

Since prehistoric times, the acquisition, exploitation and processing of mineral resources has always been an operation that requires specific technical knowledge. This has led to the development of specialized technological complexes within each mining region adapted to the local requirements – be it environmental, economic or social in nature. Moreover, due to the geographic distribution of the exploited raw materials, many mining areas were initially located in the peripheries, but throughout time they became economic centers and even points of origin for technological innovation. Exchange processes between mining areas also were likely. The spatial and chronological distribution of characteristic traits allows to draw conclusions about the presence of contact and trade networks. However, the exact quality and mechanism of these exchanges is often unclear: was the knowledge spread directly by the physical movement of specialists or more indirectly through middlemen? Likewise, there are cases where innovations - in spite of their spatial and temporal proximity - were apparently consciously NOT adopted. Thus, mining-related technology does not appear as an isolated occurrence, but as a component of a meshwork of different factors that regulated the work and life of the mining district.

This session will focus on a chronological and spatially comprehensive discourse of the modularity of technology transfer and its premises. Focus will be put upon the identification and characterization of knowledge transfer in the archaeological record, the roll of implicit knowledge in the spread of technological innovation, as well as the discussion of the reasons that help or hinder the expansion of new technologies. Papers dealing with diverse fields and contexts of raw material will be welcome. This includes,

but is not limited to, archaeological research on mining districts, experimental archaeology, computer-aided modeling, as well as ethnoarchaeological examples.

SESSION KEYWORDS

mining archaeology, technology transfer, innovation, adaption

**2019 EUROPEAN ASSOCIATION OF
ARCHAEOLOGISTS ANNUAL MEETING,
BERN, SWITZERLAND, 4-7TH SEPTEMBER,
SESSION: THE ARCHAEOLOGY OF
MEDICINE AND HEALING IN PREHISTORIC
AND PROTOHISTORIC EUROPE**

Dear Aegeaneters,

We would like to announce the call for papers for our session at 2019 European Association of Archaeologists Annual Meeting (Bern, Switzerland, 4-7th September):

Call for Papers – Deadline: 14 February 2019

Session Title (Session #164): The Archaeology of Medicine and Healing in Prehistoric and Protohistoric Europe

Session organizers:

Tomáš Alušík, Charles University, First Faculty of Medicine, Czech Republic; E-mail address: alusikt@gmail.com

Christina Aamodt, Independent researcher, Greece; E-mail address: caamont@gmail.com

ABSTRACT

The medicinal and healing practices of prehistoric and protohistoric Europe have not been as thoroughly and systematically researched as the practice of medicine during Classical and Late Antiquity. The reconstruction of healing practices during this period depends almost exclusively on archaeological evidence, and concerns skeletal remains with indications of treatment, the existence of medical instruments, evidence for remedial residues and the use of therapeutic properties of plants, representations of body parts afflicted by an illness or pathology, and depictions of healers and healing practices. The identification of structures and places associated with the practice of curing, and evidence for the worship of deities believed to prevent and protect from, or heal illness, further enriches the reconstruction and understanding of medical practices in the past. Indeed, an interdisciplinary approach to the practice of medicine in the prehistoric period combining specializations such as bioarchaeology, palaeopathology, palaeodiet, archaeobotany, and organic residue analysis appears to be crucial for fully understanding the different aspects of medical practices. The aim of the session is to bring together researchers that examine medicine and healing from different angles in order to reconstruct prehistoric/protohistoric medicine. We welcome a wide spectrum of papers with a particular emphasis on methodology and the use of scientific techniques in the identification and analysis of medical practices, as well as case studies. Papers can address but are not limited to the following topics:

- Methodologies and techniques applied to the research of prehistoric medicine

- The evidence for the practice of medicine in prehistoric/protohistoric Europe
- The challenges in the recognition of prehistoric/protohistoric medicine in the archaeological record
- The preventive aspects of medicine and their identification in the archaeological record
- The social and spiritual aspects of healing
- Healers and practitioners

KEYWORDS: medicine, healing, prehistoric and protohistoric Europe, methodology and theory, palaeopathology

All speakers of EAA Annual Meetings have to be current (2019) EAA members and register for the conference. (If necessary, new membership registration is a part of the paper submission procedure).

You can submit your papers here: <https://submissions.e-a-a.org/ea2019/>

We are ready to discuss any proposals. If you need any further information, please do not hesitate to contact us.

With kind regards,

Tomas Alusik and Christina Aamodt

ENVIRONMENTAL ARCHAEOLOGY OF THE ANCIENT NEAR EAST ASOR 2019, SAN DIEGO, CALIFORNIA, NOVEMBER 20-23, 2019

Session: Environmental Archaeology of the Ancient Near East
<http://www.asor.org/am/list-of-approved-sessions-2019/#environmental>

Description: This session accepts papers that examine past environmental resources (flora, fauna, water, soil, etc.), their social uses, and human-environment interactions in the ancient Near East.

Note: When submitting an abstract online for this session, select the session titled “Archaeology of the Natural Environment: Archaeobotany and Zooarchaeology in the Near East.”

Submission: Abstracts should be submitted via ASOR’s Online Abstract Management System.
<https://app.oxfordabstracts.com/login?redirect=/stages/954/submission>

Deadline to Submit: February 15, 2019

Please note that presenters must be ASOR members and registered for the San Diego meeting in order to submit an abstract.

Questions may be directed to the session organizers:

Melissa Rosenzweig (melissa.rosenzweig@northwestern.edu)
Madelynn von Baeyer (madelynn_vonbaeyer@fas.harvard.edu)

ARCHAEOMETALLURGY: METAL PROVENANCING IN THE SOUTHERN LEVANT, JERUSALEM, FEBRUARY 2-4, 2019

Hosted by the Laboratory for Archaeological Materials and Ancient Technologies (LAMAT), The Institute of Archaeology, The Hebrew University of Jerusalem (HUJI) and The French Research Center in Jerusalem (CFRJ)

Saturday-Sunday, February 2-3

Excursion to mines and smelting camps in the Arabah (Timna Valley and Wadi Amram)

Monday, February 4

Barbara Mandel Auditorium, Mandel Building, Mount Scopus, HUJI

9:30-13:00 First Session: Sourcing Iron

Chair: Prof. Yigal Erel (Institute of Earth Sciences, HUJI)

Provenance of Iron: A New Approach! (Michael Brauns, Curt-Engelhorn-Zentrum Archäometrie, An-Institut der Universität Tübingen)

Potential Iron Sources of the Iron Age Southern Levant; Survey, Analyses and Experiments (Adi Eliyahu-Behar, Ariel University)

Hematite Objects from Iron Age Sites as a Proxy for Iron Sourcing (Adi Shulman, The Program of Environmental Sciences, HUJI)

Coffee Break

Understanding the Earliest Iron Artifacts in South Eastern Arabia (Ivan Stepanov, Ariel University)

Iron Economy during the Early Iron Age in Northern France and Western Germany: Approaching the Origin and Circulation of Iron (Sylvain Bauvais, CNRS, Paris)

Local or Foreign Iron during the 2nd Millennium AD in Coastal Countries of West Africa? (Caroline Robion-Brunner, CNRS, Paris)

Lunch Break

14:00-17:00 Second Session: Non-Ferrous Metals

Chair: Prof. Sarel Shalev (University of Haifa)

Inscribed Lead Ingots from Caesarea (Naama Yahalom-Mack, Institute of Archaeology, HUJI, Assaf Yasur-Landau and Ehud Galili, University of Haifa)

The Source of Levantine Silver in the Iron Age I: The Problem of Cu-Ag Alloys (Tzila Eshel, University of Haifa and HUJI)

Coffee Break

Mining Referentials for Metal Tracing in Ancient Times (Sandrine Baron, CNRS, Paris)

Remarks on the Provenancing of Copper from Cyprus (Vasiliki Kassianidou, University of Cyprus)

17:30 Dinner Reception at the French Research Center in Jerusalem, 3 Shimshon St.

To confirm your participation in the conference please contact Naama Yahalom-Mack (naama.yahalom@mail.huji.ac.il).

**POWER AND CONTROL OVER
METALLURGY PRODUCTION, AGM
SUMMER MEETING, SATURDAY THE 8TH
JUNE 2019**

This meeting will explore how metal production was controlled in different societies, in the UK and further afield. The plan is to explore control in a range of periods, including how the Roman military controlled lead and iron production and the Anglo-Saxon elites use of precious metals in Anglo-Saxon palace workshops and beyond.

The venue for the meeting is Reading, which had one of the richest monasteries with a royal connection and the museum has a display of finds from nearby Silchester. The meeting will be held in the Victorian Town Hall.

Call for papers for oral presentations. We would be interested in papers on all aspects of metallurgy, ferrous and non-ferrous, from sites or collections associated with military, religious or elite settings where control may have been a factor. Or papers discussing the control of metallurgical production in past societies.

The deadline for abstracts is now the 4th of February, which should be c. 250 words. These should be sent to events@hist-met.org

The programme will be announced in Mid February.

For more information about the event please visit the Historical Metallurgy Society website, <http://hist-met.org/meetings/agm-2019.html>, or contact the organiser by emailing Eleanor.blakelock@blueyonder.co.uk

TRIAL BY FIRE CONFERENCE, 17TH AND 18TH MAY 2019, UCL INSTITUTE OF ARCHAEOLOGY

Dear All

The UCL Institute of Archaeology is hosting the Trial by Fire conference on 17th and 18th May 2019 (<https://www.trialbyfireteam.com/information>). The event is meant to bring together scientists from across archaeological and anthropological sub-disciplines, with emphasis on archaeomaterials and bioarchaeology, to explore ideas about fire as an artefact, the force of transformation, or an aesthetic tool, amongst others.

We cordially invite you to submit abstracts by 31st January 2019 (max 250 words). Please check this link for information on how to submit:

<https://www.trialbyfireteam.com/submit-an-abstract>

With best wishes,

Mike Charlton

3ο ΠΑΝΕΛΛΗΝΙΟ ΣΥΝΕΔΡΙΟ **ΨΗΦΙΟΠΟΙΗΣΗΣ ΠΟΛΙΤΙΣΤΙΚΗΣ** **ΚΛΗΡΟΝΟΜΙΑΣ, 25-27 ΣΕΠΤΕΜΒΡΙΟΥ 2019,** **ΑΘΗΝΑ**

Η καρδιά του Ελληνικού Πολιτισμού θα χτυπήσει δυνατά κάτω από την Ακρόπολη των Αθηνών. Μια μεγάλη συνεργασία Φορέων Ελλάδας και Κύπρου. Θεσμός για την Ελλάδα η μεγάλη συνάντηση της Επιστήμης με τον Ελληνικό Πολιτισμό. Πολιτισμός, παιδεία, έρευνα, καινοτομία, ψηφιακές τεχνολογίες, τουρισμός

Η Αθήνα θα είναι η πόλη που θα φιλοξενήσει στις 25,26 και 27 Σεπτεμβρίου 2019 το **3ο Πανελλήνιο Συνέδριο Ψηφιοποίησης Πολιτιστικής Κληρονομιάς 2019** (3rd Pan-Hellenic Conference on Digital Cultural Heritage-EuroMed 2019), που έχει θεσμοθετηθεί και διοργανώνεται στην Ελλάδα κάθε δύο (2) χρόνια, μετά από απόφαση των διοργανωτών Φορέων, που είναι το Τεχνολογικό Πανεπιστήμιο Κύπρου (ΤΕ.ΠΑ.Κ.-Εργαστήριο Ψηφιακής Πολιτιστικής Κληρονομιάς(UNESCO Chair on Digital Cultural Heritage και EUERA Chair on Digital Cultural Heritage), το Πανεπιστήμιο Δυτικής Αττικής (Εργαστήριο του Τμήματος Μηχανικών Βιομηχανικής Σχεδίασης και Παραγωγής-Σχολή Μηχανικών) και ο Πολιτιστικός Οργανισμός "Δίκτυο ΠΕΡΡΑΙΒΙΑ".

Πρόκειται για το **3ο**, κατά σειρά, "**Πανελλήνιο Συνέδριο Ψηφιοποίησης Πολιτιστικής Κληρονομιάς -Pan-Hellenic Conference on Digital Cultural Heritage**", που θα διοργανωθεί στην Ελλάδα, το φθινόπωρο του 2019, σε συνεργασία των διοργανωτών με Ελληνικά Πανεπιστημιακά Ιδρύματα, με παγκόσμιους επιστημονικούς φορείς, με την Ελληνική και Κυπριακή Πολιτεία, με ερευνητικά κέντρα κ.α'. ενώ αξιοποιείται η τεράστια εμπειρία του ΤΕΠΑΚ στη διοργάνωση των παγκόσμιων συνεδρίων Ψηφιοποίησης EuroMed στην Κύπρο, επίσης, κάθε δύο χρόνια.

Στα πλαίσια του Συνεδρίου **προσκαλείται όλη η επιστημονική και ερευνητική κοινότητα, από την Ελλάδα και την Κύπρο**, Έλληνες και Κύπριοι ερευνητές ανά την υφήλιο, να δηλώσουν συμμετοχή αλλά και να υποβάλλουν τις εισηγήσεις και τα Posters τους, μέσω της επίσημης ιστοσελίδας του Συνεδρίου που θα ενεργοποιηθεί σύντομα.

Τα Συνέδρια αυτά, λόγω της θεματολογίας τους χαρακτηρίστηκαν από όλους ως εθνικής σημασίας, και αξίζει να σημειωθεί ότι το 2ο Συνέδριο τελούσε υπό την Αιγίδα της **ΑΕ του Προέδρου της Δημοκρατίας κυρίου Προκοπίου Παυλοπούλου** και της **Α.Θ. Παναγιώτητος του Οικουμενικού Πατριάρχου Κωνσταντινουπόλεως κ.κ. Βαρθολομαίου**, ενώ είχε την υποστήριξη και συνεργασία του Υπουργείου Ψηφιακής Πολιτικής, Τηλεπικοινωνιών και Ενημέρωσης, του Υπουργείου Πολιτισμού και Αθλητισμού, του Υπουργείου Τουρισμού, του Ελληνικού Οργανισμού Τουρισμού, της Πρεσβείας της Κύπρου στην Αθήνα, της Περιφέρειας Θεσσαλίας/ΠΤΑ/Europe Direct και πολλών παγκόσμιων επιστημονικών οργανισμών, από τους οποίους, επίσης, θα ζητηθεί να στηρίξουν και το 3ο Συνέδριο.

Τα δύο (2) πρώτα - πρωτοπόρα και καινοτόμα για την Ελλάδα- Συνέδρια Ψηφιοποίησης Πολιτιστικής Κληρονομιάς, που διοργανώθηκαν μέχρι σήμερα (Βόλος 24-26/9/2015 και

Βόλος 1-3/12/2017), είχαν εξαιρετική επιτυχία, αγκαλιάστηκαν από όλη την επιστημονική κοινότητα και συμμετείχαν στο καθένα 500 σύνεδροι ,που προέρχονταν από την Ελλάδα, την Κύπρο και από δεκάδες χώρες του κόσμου.

Η πρώην Υπουργός Πολιτισμού και Αθλητισμού κ. Λυδία Κονιόρδου, το θεσμοθέτησε για τη χώρα ως ένα από τα εγκυρότερα και πιο αξιόπιστα του είδους του.

Το Συνέδριο Ψηφιοποίησης Πολιτιστικής Κληρονομιάς απευθύνεται προς:

1. Επιστημονικό δυναμικό των Πανεπιστημίων, Ιδρυμάτων και Ινστιτούτων , όλων των βαθμίδων, με ειδίκευση στην Αρχαιολογία ,Ιστορία, Γεωλογία, Βιολογία, Ανθρωπολογία, Χημεία, Πληροφορική, Φυσική, Μαθηματικά, Πολιτισμική Πληροφορική, Πολυτεχνεία (Ηλεκτρολόγοι Μηχανικοί, Πολιτικοί Μηχανικοί, Αρχιτέκτονες κ.ά.), Συντηρητές Ανασκαφικών Ευρημάτων και Έργων Τέχνης, Γραφιστικές Τέχνες κ.α. ,ειδικότητες δηλ. που εμπλέκονται με οποιονδήποτε τρόπο στο μεγάλο θέμα της Ψηφιοποίησης της Πολιτιστικής Κληρονομιάς.
2. Στελεχιακό δυναμικό του Υπουργείου Παιδείας, Πολιτισμού και Θρησκευμάτων, του Υπουργείου Οικονομίας, Υποδομών, Ναυτιλίας και Τουρισμού, Εφορειών Αρχαιοτήτων, ICOMOS, Μουσείων, Γενικών Αρχείων του Κράτους, κρατικών και ιδιωτικών βιβλιοθηκών, Ιερών Μητροπόλεων της Εκκλησίας της Ελλάδος και άλλων Εκκλησιών, Ομοσπονδιών, Συλλόγων Επιστημόνων, Ένωση Ελλήνων Συντηρητών, Ελληνική Αρχαιομετρική Εταιρεία, Ένωση Αρχαιολόγων, Σύλλογο Αρχιτεκτόνων, ICOM Ελλάδος και Κύπρου, Συλλογικοτήτων, Μελετητικών Εταιριών, Φορείς υλοποίησης Εθνικών και Ευρωπαϊκών Προγραμμάτων, Μη Κυβερνητικών Οργανώσεων κ.ά. όπως και τους αντίστοιχους Φορείς της Κύπρου.
3. Στελέχη άλλων Υπουργείων και ΟΤΑ Α' και Β' Βαθμού
4. Έλληνες και Κύπριους που εργάζονται σε Ελληνικά και Ξένα Πανεπιστήμια, Ερευνητικά Κέντρα σχετικά με τον Πολιτισμό
5. Έλληνες και Κύπριους Φοιτητές Ελληνικών και Ξένων Πανεπιστημίων
6. Ανεξάρτητους Επιστήμονες και Ερευνητές στην Ελλάδα, Κύπρο και όλο τον κόσμο
7. Γενικά ,κάθε ενδιαφερόμενο σε θέματα ψηφιοποίησης της Πολιτιστικής Κληρονομιάς

Ειδικότερα θα αναπτυχθούν οι παρακάτω Θεματικοί άξονες:

- Νέες τεχνολογίες στις ανθρωπιστικές επιστήμες
- Η ψηφιοποίηση στην Αρχαιολογία και τον τουρισμό
- Ψηφιακή Πολιτιστική κληρονομιά και η διαχείριση της
- Συντήρηση, Προστασία και ανάδειξη της πολιτιστικής κληρονομιάς στο ψηφιακό πολυμεσικό περιβάλλον και διαδίκτυο (Εκπαίδευση, Τουρισμό, κτλ)
- Νομικό πλαίσιο και ψηφιοποίηση της Πολιτιστικής Κληρονομιάς (συμβάσεις, προγράμματα, πνευματικά δικαιώματα)
- Εμπειρίες, νέες προκλήσεις και προοπτικές για την ψηφιακή κοινωνία της Πολιτιστικής Κληρονομιάς.

Ο σκοπός της θεσμοθέτησης του Πανελλήνιου Συνεδρίου Ψηφιοποίησης της Πολιτιστικής Κληρονομιάς από το 2015, πέτυχε απόλυτα ,αφού έχει καθιερωθεί για την Ελλάδα, με τον πιο επίσημο τρόπο, ως ένα επιστημονικό βήμα κατάθεσης γνώσεων, προτάσεων, καλών πρακτικών, ερευνών, διαδικασιών, προτύπων και απόψεων για

ζητήματα που σχετίζονται με την ψηφιοποίηση, τεκμηρίωση και ανάδειξη της υλικής και άυλης πολιτιστικής κληρονομιάς του Ελλαδικού χώρου.

Σημειώνεται ότι θα συνεχίσει να διοργανώνεται κάθε δύο χρόνια (2021,2023,...), θα συγκεντρώνει το ενδιαφέρον όλης της επιστημονικής κοινότητας από πολλές χώρες, των απανταχού Ελλήνων επιστημόνων και θα οδηγεί την εθνική στρατηγική για την Ψηφιακή πολιτιστική μας κληρονομιά , αναδεικνύοντας τον Ελληνικό Πολιτισμό σε όλη την υφήλιο, δημιουργώντας ρεύμα Πολιτιστικού Τουρισμού (Αρχαιολογικού, θρησκευτικού κλπ).

Οι ενδιαφερόμενοι για ενημέρωσή τους για το 1ο και το 2ο Συνέδριο ,μπορούν να επισκέπτονται τους ιστότοπους www.euromed2015.eu, www.euromed2017.eu, ενώ σύντομα θα ενεργοποιηθεί η ηλεκτρονική πλατφόρμα δήλωσης συμμετοχών των συνέδρων και υποβολής των εργασιών των εισηγητών για το 3ο Συνέδριο.

Πληροφορίες: Δίκτυο "ΠΕΡΡΑΙΒΙΑ" -Κων. Σκριάπας Τηλέφ. 6974-881944, skriapask@gmail.com, www.perreivia.net.gr.

Με Εκτίμηση

Η Οργανωτική Επιτροπή του Συνεδρίου

- ΜΑΡΙΝΟΣ ΙΩΑΝΝΙΔΗΣ -ΚΥΠΡΟΣ
- ΘΕΟΔ.ΓΚΑΝΕΤΣΟΣ,ΙΩΑΝΝΗΣ ΒΑΡΑΛΗΣ, ΗΛΙΑΣ ΝΟΜΠΙΛΑΚΗΣ , ΚΩΝ/ΝΟΣ ΣΚΡΙΑΠΑΣ -ΕΛΛΑΔΑ
- ΣΤΟΙΧΕΙΑ ΟΡΓΑΝΩΤΙΚΗΣ ΕΠΙΤΡΟΠΗΣ

Όνοματεπώνυμο	Φορέας	Στοιχεία Επικοινωνίας
ΚΥΠΡΟΣ		
Dr Μαρίνος Ιωαννίδης	Διευθυντής Εργαστηρίου Ψηφιακής Πολιτιστικής Κληρονομιάς ΤΕΠΙΑΚ (UNESCO Chair on Digital Cultural Heritage και EUERA Chair on Digital Cultural Heritage (Λεμεσός - ΚΥΠΡΟΣ)	E-Mail: marinos.ioannides@cut.ac.cy
ΕΛΛΑΔΑ		
Dr Θεόδωρος Γκανέτσος	Καθηγητής Πανεπιστημίου Δυτικής Αττικής -Τμήμα Μηχανικών Βιομηχανικής Σχεδίασης και Παραγωγής- Σχολή Μηχανικών - Πανεπιστήμιο Δυτικής Αττικής - ΕΛΛΑΔΑ	E-Mail: ganetsos@uniwa.gr
Dr Ιωάννης Βαράλης	Επικ. Καθηγητής Τμήματος Ιστορίας - Αρχαιολογίας και Κοινωνικής Ανθρωπολογίας Πανεπιστημίου Θεσσαλίας - ΒΟΛΟΣ - ΕΛΛΑΔΑ	E-Mail: iovaralis@uth.gr
Ηλίας Νομπιλάκης	τ. Καθηγητής Συντήρησης Λίθου ΤΕΙ ΑΘΗΝΩΝ - ΑΘΗΝΑ - ΕΛΛΑΔΑ	E-Mail: elnobil@hotmail.com
Κων/νος Σκριάπας	Οικονομολόγος -Σύμβουλος Ανάπτυξης & Επιχειρηματικότητας- Πρόεδρος ΔΣ Δικτύου "ΠΕΡΡΑΙΒΙΑ"- Δευτεροβάθμιας Φορέας Πολιτισμού και Επιστημών - ΕΛΛΑΔΑ	E-Mail: skriapask@gmail.com , Mobile:++30-6974-881944

**EXPERIMENTAL AND EXPERIENTIAL
ARCHAEOLOGY, ASOR 2019 ANNUAL
MEETING, SAN DIEGO, THE WESTIN, SAN
DIEGO, CA, NOV. 20-23, 2019**

Chair: Tracy L. Spurrier (University of Toronto)

SESSION DESCRIPTION

This session will feature recent research involving experimental and experiential archaeology projects. This type of work allows archaeologists to put themselves into the past to better understand the production processes of everyday life activities, and to attempt to access ancient human existence, albeit through the lens of our modern perspectives.

Experimental and experiential archaeology projects test archaeological interpretations of ancient manufacture by reconstructing objects and recreating their production methods. Through the experiments, one can try to identify the intentions and goals involved in ancient production and to understand the limitations and challenges that may have been present throughout these processes. This includes, but is not limited to, craft production, food preparation, building construction, tool making, technological innovations, and much more.

The act itself of conducting an experiment replicating past procedures, as opposed to simply studying them, allows for greater insight into the complexity of the overall process as well as personally experiencing the physicality of a task and other related sensations.

The outcomes of experimental and experiential archaeology projects are invaluable for many reasons: testing hypotheses about ancient manufacture, use as pedagogical tools for education purposes, for creating accurate living history museums, and in simulation models and exercises.

To submit an abstract of 250 words or less, please use ASOR's Online Abstract Submission Site, the deadline is February 15, 2019:

<http://www.asor.org/am/2019-call-for-papers/>

Note: ASOR membership and registration are required for participation and must be current at the time of abstract submission.

For any questions, please contact Tracy L. Spurrier (tlspurrier@gmail.com)

Please visit the site: <http://www.asor.org/am/>

INK CORROSION CONFERENCE ICC CALL **FOR PAPERS, 24TH AND 25TH OCTOBER** **2019**

European Research Centre for Book and Paper Conservation Restoration
Zentrum für Kulturgutschutz
Department Bauen und Umwelt
University for continuing Education Krems
Dr. Karl Dorrekstr. 30
3500 Krems, Austria

The conference aims to bring together experts from all fields who do research in ink corrosion who are responsible for a collection where ink corrosion poses a severe problem and are in need of an appropriate treatment of texts and graphic art on corroded carriers.

We call for papers which summarize the status quo from the perspective of a certain group of professionals including conservators, scientists, archivists, librarians, etc., and introduce the latest research results in the treatment of texts or drawings suffering from ink corrosion, and describe particular problems in the context of ink corrosion and its mitigation that have been overlooked so far.

Deadline for submitting abstracts (about 500 words in English) is 31st January 2019.

Please send abstracts to patricia.engel@donau-uni.ac.at

The articles will be published.

Members of the scientific board are Carme Sistach, Jasna Malešič and Patricia Engel.

**CALL FOR ABSTRACTS: ART,
ARCHEOLOGY AND PALEONTOLOGY
SESSION AT THE 67TH ANNUAL AMERICAN
SOCIETY OF MASS SPECTROMETRY
CONFERENCE ON MASS SPECTROMETRY
2019, ATLANTA, USA, JUNE 2-6**

Deadline For Abstracts: February 1, 2019

Submit an abstract and register at the conference website:
<https://www.asms.org/conferences/annual-conference/annual-conference-homepage>

Art, Archaeology and Paleontology has a session from 2:30-4:30 PM on Monday, June 3rd at the 67th Annual American Society of Mass Spectrometry (ASMS) conference, June 2-6, 2019 in Atlanta Georgia. Art, Archaeology and Paleontology Session Description Organic components are found in a wide variety of Cultural Heritage objects including artworks, books, manuscripts, archaeological artifacts or paleontological materials. Whether ancient biomolecules (proteins, lipids, polysaccharides, or organic colorants) originate from paint binders, glues, parchment, textiles, residues in pots, dyes, bones, or plant remains, their confident isolation and identification is equally challenging due to the very small amounts of degraded target molecules often bound in complex mineral and organic matrices. In the last decade the power of mass spectrometry has been established for the characterization of many classes of ancient biomolecules. Their intrinsic analytical challenges make them a target of particular interest to instrument developers and it is no surprise that much of the leading research on ancient biomolecules has been facilitated by advancements in instrumentation development and manufacturer support. The power of MS is not just the identification of the biomolecules and biological species, which undeniably can reveal much about the deliberate (or not) use of certain animals and plants to create objects. New research delves into what questions the mechanisms of degradation can answer about the age of biomolecules as well as their stability. These factors impact the preservation of objects in terms of their storage and handling as well as the interpretation of the visual appearance of an object, its preservation history, and may place an object in time.

CALL FOR PAPERS - LIGHT AND LIGHTING **CONFERENCE, SEPTEMBER 26TH - 28TH,** **2019, GOETHE-NATIONALMUSEUM,** **WEIMAR, GERMANY**

The lighting of cultural heritage objects in museums and historic houses is the focus of a conference organised by the German Association of Conservator-Restorers (Verband der Restauratoren ? VDR) Preventive Conservation Working Group in cooperation with the Klassik Stiftung Weimar.

We invite contributions from research and practice. The aim of the conference is to improve discussions on, but not limited to, the following major lighting topics.

Quality of light:

- * Spectral energy distribution of different light sources
- * Sensitivity of different materials to different types of radiation
- * Measuring light sensitivity of materials/Micro Fading Testing
- * How dangerous is heat radiation, and how do we deal with it?
- * Artificial light vs. daylight?

Light protection:

- * Practical light protection (shielding, filtering, covering etc.)?
- * Examples of lighting regimes in different collections, especially longterm experience.

Lighting technology:

- * What is ?state of the art? in lighting technology?
- * Novel and future developments
- * Examples of adjustments of existing lighting (low budget examples are welcome)

Lighting design:

- * Lighting design and light colour requirements of different types of objects.
- * Design aspects concerning the choice of different lighting media?

We appreciate contributions by professionals and experts working on any aspect of lighting of heritage objects, including curators, conservators, technicians, scientists, designers etc. Conference languages will be German and English. The event falls in conjunction with celebrations of the 100th anniversary of Bauhaus in 2019.

Submissions for 20-minutes presentations or posters must be in Microsoft WORD format with a maximum length of 3000 characters including the working title. In addition, we request a brief biography and a photograph of each author (minimum resolution 300 dpi,

PNG, JPG or TIFF format). Proposals to be submitted to: praeventive-konservierung@restauratoren.de.

Dead line for submissions: February 15th, 2019.

Cord Brune
Speaker of the VDR Preventive Conservation Working Group

Contact:

Tel.: +49 (0) 331-58398758

Mob.: +49 (0) 1511-9457776

@: mail@brune-conservation.de



**UNTOLD AND INEXPRESSIBLE: GAPS AND
AMBIGUITIES IN THE MEDICINE AS AN
EPISTEMOLOGICAL CHALLENGE, 15-16
JUNE 2019, JOHANNES GUTENBERG
UNIVERSITY MAINZ, INSTITUTE FOR
HISTORY, THEORY AND ETHICS OF
MEDICINE OF THE UNIVERSITY MEDICAL
CENTER MAINZ, AM PULVERTURM 13,
BASEMENT (LECTURE HALL U1125)**

Deadline: 31 January 2019

Organisation: Norbert W. Paul, Tanja Pommerening

Medical treatments aim to improve the patient's health. From the patient's perspective, the elimination of the suffering and the restitution of "normal" life is a crucial part of the process.

Patients express this in communication with the practitioner by describing symptoms on one side and impairments affecting their lives on the other. Much of this can hardly be described in words, especially embodied experiences which do not correlate with medical findings and thus are often not deemed relevant. In this regard, the patient faces the rigid and rational diagnostical categories of the practitioner that sometimes do not at all coincide with the patient's own categories. However, how the gap between the concepts used by the practitioner and the patient could be bridged does rarely come up for discussion.

Not surprisingly, this problem is also highly relevant in the study of historical sources, textual or illustrative. Sources also communicate with us even when we use them only as research objects. They were not however transmitted for this end, and certainly one cannot pose them clarifying questions. One way to reveal the underlying concepts is by means of wide contextualization. Nowadays, a number of linguistic theories focus on the inexpressible; among them are the conceptual metaphor theory, the prototype theory, and translation theories. The untold remains however a gap.

These gaps appear to have been used in the history of medicine as projection areas. The still common attempts at retrospective diagnoses provide a good example of an overly reductionist view of ambiguous and sometime even opaque medical phenomena. Historians assume that the categories and concepts coincide with the modern ones and try to fill the gaps with narratives. This is not a novel phenomenon but rather a fundamental historico-epistemological problem of the history of science.

Our conference aims to explore these phenomena from a methodological perspective. We ask modern doctors how they bridge the communicative gap between their categories and those of the patients. We ask the historical disciplines how they deal with what is left untold or is inexpressible from the perspective of the sources. We are pleased to receive proposals of papers from historiographers of science studying old textbooks on medicine history and exploring the narratives used to fill the gaps in the primary sources.

We expect proposals of papers on the main theme, limited to 20 minutes, as well as panels with a series of papers, lasting 90 minutes. Beside the specified theme, it is also possible to include other papers (limited to 20 minutes) from the domain of the pre-modern medicine.

Please submit your proposals of papers or panels to Alexander Ilin-Tomich (ailintom@uni-mainz.de) before 31 January 2019 including an abstract (c. 300 words), which clearly describes the questions and outcomes of your study.

This Call for Papers as PDF:

https://www.iak-alte-medizin.uni-mainz.de/files/2019/01/Call-for-Papers_en.pdf

You will find more information on the Ancient Medicine Interdisciplinary Working Group on <https://ancient-medicine.uni-mainz.de/>

UK ARCHAEOLOGICAL SCIENCES
CONFERENCE IN MANCHESTER 24TH-26TH
APRIL 2019

Dear all,

The University of Manchester will be hosting UKAS 2019 and is looking forward to welcoming the archaeological science community to Manchester, the first industrial city and academic home to many famous scientists including Boyd Dawkins, Chadwick, Dalton, Drew-Baker, Joule, Ollerenshaw, Rutherford, Stopes, J.J. Thomson and Turing. In addition to being the first female academic member of staff at the University of Manchester, Marie Stopes, famed for her ground-breaking work on sexual health, was also a well renowned palaeobiologist. William Boyd Dawkins, former Curator of the Manchester Museum and Professor of Geology, also achieved many distinctions in archaeology but particularly noted for his research in Late Pleistocene cave assemblages.

The conference will take place in the Manchester Institute of Biotechnology (MIB), a few minutes walk from Manchester Picadilly train station. The Welcome Reception will be held at the Manchester Museum fossil gallery on the 24th April with some of Boyd Dawkins' faunal collections in the surrounding displays. The conference dinner will be held on the 26th April at Christies Bistro, based in the nearby old Science Library of Owens College.

Information regarding key dates is available on the conference website:
<https://ukas2019.com/>

DEADLINE IS 11th January!

We welcome further queries to ukas.manchester@gmail.com

Sincerely

UKAS 2019 Organising Committee

**EUROPEAN MEETING ON ANCIENT
CERAMICS (EMAC) 2019, 16-18 SEPTEMBER,
BARCELONA, SPAIN**

The European Meeting on Ancient Ceramics (EMAC) is a biennial conference convening scholars and young researchers with diverse academic backgrounds from both the humanities and sciences. The goal of the meeting is to promote interdisciplinary and integrated studies of ancient ceramics covering various aspects ranging from production, dissemination and use to post-depositional alteration and conservation. Methodological developments, new approaches and scientific advances are presented in terms of analytical and measuring techniques, data processing and interpretation.

Please visit the site: <http://www.ub.edu/emac2019/welcome/>

ΘΕΣΕΙΣ ΕΡΓΑΣΙΑΣ/ΥΠΟΤΡΟΦΙΕΣ –
JOB VACANCIES/FELLOWSHIPS

ΠΡΟΓΡΑΜΜΑ ΥΠΟΤΡΟΦΙΩΝ ΑΠΟ ΤΗ
ΓΑΛΛΙΑ ΓΙΑ ΈΛΛΗΝΕΣ ΝΕΟΥΣ ΕΡΕΥΝΗΤΕΣ

Διά του παρόντος σας γνωστοποιούμε ότι η Γαλλική Πρεσβεία στην Ελλάδα/ Γαλλικό Ινστιτούτο Ελλάδος παρέχει υποτροφίες κινητικότητας σε νέους Έλληνες μεταδιδακτορικούς ερευνητές. Οι υποτροφίες δίνουν τη δυνατότητα σε νέους ερευνητές να διεξάγουν ερευνητικό έργο σε ένα γαλλικό εργαστήριο σε διάφορα ερευνητικά πεδία.

Ημερομηνίες υποβολής των υποψηφιοτήτων είναι από 14 Ιανουαρίου 2019 **μέχρι 30 Απριλίου 2019**.

Ο κανονισμός του προγράμματος, η προκήρυξη και η ηλεκτρονική φόρμα υποψηφιοτήτων έχουν αναρτηθεί στην ιστοσελίδα του Γαλλικού Ινστιτούτου Ελλάδος: <http://www.ifa.gr/el/etudes-en-fr-gen/bourses-de-mobilite-el/bourses-chercheurs-el>.

ID: 1485

Επισυναπτόμενα:  [Υποτροφίες Gallia 2019 signed.pdf](#)

FELLOWSHIPS: COULSON CROSS AEGEAN EXCHANGE PROGRAM (ELIGIBILITY, GREEK NATIONALS)

Deadline: March 15, 2019

W.D.E. Coulson and Toni M. Cross Aegean Exchange Program for Greek Ph.D. level graduate students and senior scholars in any field of the humanities and social sciences from prehistoric to modern times to conduct research in Turkey, under the auspices of the American Research Institute in Turkey (ARIT) in Ankara and/or Istanbul during the academic year.

The purpose of these fellowships is to provide an opportunity for Greek scholars to meet with their Turkish colleagues, and to pursue research interests in the museum, archive, and library collections and at the sites and monuments of Turkey. Fellowships are funded by the U.S. Department of State Bureau of Educational and Cultural Affairs through the Council of American Overseas Research Centers, which also provides funding for Turkish graduate students and senior scholars to study in Greece, under the auspices of the American School of Classical Studies at Athens.

The ARIT-Ankara library holds approximately 13,000 volumes focused on archaeological studies, but also includes resources for scholars working on modern Turkish studies. The library at ARIT-Istanbul includes approximately 14,000 volumes and covers the Byzantine, Ottoman, and modern Turkish periods. Archives, libraries, sites, and museums in Turkey provide resources for research into many fields of study and geographical areas.

Eligibility: Greek nationals including staff of the Ministry of Culture; doctoral candidates and faculty members of Greek institutions of higher education.

Duration: From two weeks to two months.

Terms: Stipend of \$250 per week plus up to \$500 for travel expenses. Four to eight awards are available. ARIT, located in Istanbul and Ankara, will provide logistical support and other assistance as required, but projects are not limited to those two cities. For further information on ARIT: <http://ccat.sas.upenn.edu/ARIT/>. A final report to ASCSA and ARIT is due at the end of the award period, and ASCSA and ARIT expect that copies of all publications that result from research conducted as a Fellow of ASCSA/ARIT be contributed to the relevant library of ASCSA/ARIT.

Application: Submit “Associate Membership with Fellowship” application online. For more information about the application, visit: <https://www.ascsa.edu.gr/apply/fellowships-and-grants/graduate-and-postdoctoral>.

The application should include a curriculum vitae, statement of the project to be pursued during the period of grant (up to three pages, single-spaced in length), two letters of

reference from scholars in the field commenting on the value and feasibility of the project.

Web site: www.ascsa.edu.gr or <https://www.ascsa.edu.gr/apply/fellowships-and-grants/graduate-and-postdoctoral>

E-mail: application@ascsa.org

The awards will be announced in late spring.

The American School of Classical Studies at Athens does not discriminate on the basis of race, age, sex, sexual orientation, color, religion, ethnic origin, or disability when considering admission to any form of membership or application for employment

If you would like to be removed from this emailing list, please respond with "remove."

POSTDOCTORAL ASSOCIATE POSITION IN THE APPLICATION OF A PORTABLE LASER ABLATION SAMPLING DEVICE AND ICP-MS TO THE ANALYSIS OF CULTURAL HERITAGE OBJECTS AT YALE'S INSTITUTE FOR THE PRESERVATION OF CULTURAL HERITAGE

The Institute for the Preservation of Cultural Heritage (IPCH), at Yale University, is seeking a scientist at the postdoctoral associate level to focus on the refinement and application of a portable ultraviolet (UV) laser ablation micro-sampling tool for elemental and isotopic studies of glass and ceramic objects. The project involves the use of ICP-MS facilities at Yale's Department of Geology & Geophysics to quantitatively assess the performance of the existing prototype. Additionally, the postdoctoral associate will collaborate on the application of the sampling tool and analytical method to the study of objects, preferably made of glass, in the American Decorative Arts collection of the Yale University Art Gallery. This position offers the successful candidate the opportunity to work intensively with museum scientists, conservators, curators, scholars and students, while developing skills and experience that may be applicable in geology, mineralogy, paleontology, archaeometry, forensics, material culture studies, conservation science, etc.

Position and application information

The postdoctoral associate position is a full-time, 12-month position (renewable). The starting date is negotiable; a date in or before July 2019 is preferred. Salary will be based on Yale's guidelines for postdoctoral positions (<https://postdocs.yale.edu/postdocs/salaries-taxes>). For a description of benefits, including health insurance, see <https://postdocs.yale.edu/postdocs/benefits>. Support for travel associated with projects is provided. This position is based at Yale's West Campus, on the border of West Haven and Orange CT, and at the Yale Metal Geochemistry Center on Central Campus. The position also requires visits to Yale's collections and conservation facilities on Central Campus. There is a free shuttle service between Yale's campuses.

About the Institute for the Preservation of Cultural Heritage The Institute is a research collaborative, dedicated to the preservation and interpretation of material culture. Our research decodes art and artifacts, enabling scholars across disciplines to incisively interpret origins and histories. Fundamental to this work is understanding and managing change, especially deterioration and its detection, monitoring, and treatment. We also develop tools and methodologies that enable new modes of studying art and artifacts. Facilities include a variety of ED-XRF instruments, optical microscopes, FTIR microscope, Raman microscope, SEM/EDS, GC/MS, UV/Vis spectroscopy, and an array of accelerated aging and mechanical testing equipment. In addition to scientific laboratories, the IPCH also houses the Conservation Laboratory and the Digitization

Laboratory, which are collaborative spaces providing infrastructure, equipment, and expertise to Yale's collections and researchers pursuing the examination, documentation and conservation treatment of objects. IPCH staff has easy access to the West Campus Materials Characterization Core, which includes XPS, FE-SEM-EDS, XRD and WD-XRF facilities. The Yale Metal Geochemistry Center includes two class ten clean rooms, two multi-collector ICP-MS systems, one single-collector ICP-MS system, and one multi-collector TIMS system.

Required qualifications

- Completion of a Ph.D. in the chemical, physical, earth or archaeological sciences.
- Expertise with ICP-MS.
- Excellent verbal and written communication skills, organizational skills, and a desire to work collaboratively.
- Curiosity about art, artifacts, or archival materials and an interest in engaging with museums and collections.

Preferred qualifications

- Familiarity with geochemical analyses and isotopic studies is highly desirable.
- Prior experience with the application of analytical techniques to cultural heritage objects is desirable but not required.

Application process

- The closing date for applications is March 3, 2019; review will begin immediately and continue until the position is filled.
- Applicants should submit a cover letter describing their interest in the position, a CV, and the names of and contact information for two references to Pablo Londero (pablo.londero@yale.edu), Conservation Scientist, Technical Studies Laboratory, Institute for the Preservation of Cultural Heritage.

Yale University is an Affirmative Action/Equal Opportunity employer. Yale values diversity among its students, staff, and faculty and strongly welcomes applications from women, persons with disabilities, protected veterans, and underrepresented minorities.

**JOB ADVERTISEMENT, DEPARTMENT OF
EARTH SYSTEM SCIENCE AT UC IRVINE,
W. M. KECK CARBON
CYCLE ACCELERATOR MASS
SPECTROMETER (KCCAMS)**

Dear colleagues,

The Department of Earth System Science at UC Irvine has an immediate opening for an Associate Specialist or Specialist to support operations of the W. M. Keck Carbon Cycle Accelerator Mass Spectrometer (KCCAMS).

For further details and how to apply: <https://recruit.ap.uci.edu/apply/JPF05067>. The application review will continue until filled.

Please feel free to post and distribute to interested individuals. Thank you!

Best,

Xiaomei

Xiaomei Xu, Ph.D.
Project Scientist

Keck Carbon Cycle AMS Facility
University of California, Irvine
Earth System Science
2222 Croul Hall
Irvine, CA 92697-3100

(949) 824 3444 Office/Lab

(949) 824 3874 Fax

xxu@uci.edu

website: https://www.researchgate.net/profile/Xiaomei_Xu

ΑΝΑΚΟΙΝΩΣΕΙΣ - ANNOUNCEMENTS

METALWORK WEAR ANALYSIS FOR BEGINNERS, WOLFSON ARCHAEOLOGY LABORATORY, NEWCASTLE UNIVERSITY, 8-9 APRIL 2019, UK

Newcastle University (UK) is offering a two-day training course in **Metalwork Wear Analysis for Beginners**. The course, led by Dr Andrea Dolfini, will take place in the Wolfson Archaeology Laboratory, Newcastle University, on 8-9 April 2019.

Wear analysis enables the recognition, evaluation, and interpretation of the traces visible on prehistoric and historic copper-alloy objects by low-power optical and electronic microscopy. The method gives insights into the life cycle of objects including their manufacture, uses, repairs, and post-depositional history. This hands-on course comprises a short theoretical introduction followed by supervised practical sessions in which participants will learn how to observe, record, and interpret the marks visible on original prehistoric bronzes from the Great North Museum: Hancock collections (in particular Bronze Age axe-heads and swords). Extensive reference collections of replica bronzes will also be used. The course does not require any background knowledge in microwear analysis or optical microscopy and is open to all on a first-come, first-served basis.

Further details can be found here: <https://research.ncl.ac.uk/cias/masterclasses/>

For queries, and to book your place, please email: thea.ravasi@ncl.ac.uk

Dr Andrea Dolfini
[Senior Lecturer in Later Prehistory](#)
[Convenor of the Cluster for Interdisciplinary Artefact Studies](#)

School of History, Classics and Archaeology
Armstrong Building
Newcastle University
Newcastle upon Tyne
NE1 7RU - UK

andrea.dolfini@ncl.ac.uk
+44 (0)191 2083402
<http://newcastle.academia.edu/AndreaDolfini>

MAKING HERITAGE SCIENCE DATA FAIR AND IMPACTFUL, FREE SEMINAR, 11 FEBRUARY 2019, UCL, EAST STRATFORD CAMPUS, LONDON E20 3BS

This free one-day seminar is jointly organised by the National Heritage Science Forum (NHSF), European Research Infrastructure for Heritage Science, UK hub (E-RIHS.uk) and Icon Heritage Science Group.

All those engaged in Heritage Science collect a wide range of different types of data on cultural heritage, about objects, buildings and landscapes, and the people who value and use them - with particular focus on understanding change over time and informing future management. This data is increasingly 'born digital' and is being used to support 'big data' projects for the benefit of the historic environment.

This seminar will explore how the FAIR principles (findable, accessible, interoperable, reusable) can be applied to heritage data, and will debate the infrastructure required to maximise the public value and impact of the data created as part of heritage science practice.

It will seek answers to four questions:

- What is heritage science data?
- How do we go about collecting, managing and storing the data we collect so that it can be used by others, both now and in the future?
- How and why should we disseminate heritage science data?
- What is the role of heritage science data in making the economic case for cultural heritage?

The day will include a range of invited speakers, panel discussion, poster session and a tour of the new Heritage Imaging Lab.

The seminar builds on work by all three of the organising institutions to understand the challenges and opportunities associated with managing and re-using heritage science data. We hope that you can join us to learn from the work of others, share your experience and contribute to a conversation about community needs in this area.

Further programme information and bookings on the Eventbrite page.

This is a free event but places are limited so please be sure you can attend at the time of registering. <https://www.eventbrite.co.uk/e/making-heritage-science-data-fair-and-impactful-tickets-55214356627>

Caroline Peach
National Heritage Science Forum

BRITISH SCHOOL AT ATHENS **PREHISTORIC, GREEK AND ROMAN** **POTTERY COURSE, 5TH-17TH APRIL 2019**

Dear Colleagues,

We would be grateful if you could help us circulate the advertisement for the British School at Athens Prehistoric, Greek and Roman Pottery Course that will take place in 5th-17th April 2019.

<https://www.bsa.ac.uk/courses/greek-and-roman-pottery/>.

This intensive course gives participants a unique opportunity to gain hands-on experience with one of the major pottery sequences in Greece, guided by leading specialists in the field. Based at the British School's Research Centre at Knossos, it makes use of the rich holdings of the Stratigraphic Museum which include material from across the Mediterranean in all periods from the Neolithic to Late Roman. Studying and examining key pottery groups will allow participants to learn the key points of identification and major debates for each period. Essential skills, like drawing and macroscopic fabric analysis, are taught in supporting workshops, and a series of lectures will introduce themes, problems and methods in the study and publication of ceramics. Towards the end, each participant has the opportunity to undertake a case study project. The course also comprises field classes to abandoned pottery workshops of the late 19th century, potting villages, visits to important Bronze Age, Classical, Hellenistic and Roman archaeological sites, along with the Heraklion Archaeological Museum. Local potters, specializing in traditional techniques, provide practical experience of all stages of pottery production. The course coordinator is Dr Kostis S. Christakis (The Knossos Curator) and instructors are Prof. Todd Whitelaw (UCL Institute of Archaeology), Dr Colin Macdonald (British School at Athens), Dr Conor Trainor (University of Warwick), Mr Antonio Bianco (University of Crete), Dr Maria Choleva (Postdoctoral Research Fellow UCLouvain), Dr. Carlotta Gardner (Williams Fellow in Ceramic Petrology, Fitch Laboratory), and Dr Denitsa Nenova (UCL Institute of Archaeology). The course is primarily intended for postgraduate students wishing to acquire or strengthen vital archaeological skills, but applications from late stage undergraduates with a strong intention to continue their studies will also be considered. The course fee of £750 includes tuition, teaching materials, room and board (shared accommodation in double rooms with breakfast and some lunch) at the British School's Research Centre at Knossos, fieldtrip travel expenses, 24-hour access to the Library, and BSA membership. Travel to and from Heraklion is the sole responsibility of the course participant. Students are recommended to apply to their universities for assistance with the fees. A very limited number of bursaries may be available from the BSA for those who would be otherwise unable to attend. Application forms can be downloaded from the British School website (www.bsa.ac.uk). Completed application forms and an academic reference letter (it is the applicant's responsibility to ensure that her/his reference is sent) should be emailed to the Knossos Curator Dr Kostis S. Christakis by **22nd February 2019** (knossoscurator@bsa.ac.uk). For further information contact the course coordinator Dr Kostis S. Christakis (knossoscurator@bsa.ac.uk).

All the best

Kostis S. Christakis

GRANTS: 2019 GORGIAS PRESS BOOK GRANT

Calling young scholars in the humanities!

Don't miss your chance to win \$500 of Gorgias Press titles as part of the 2019 Gorgias Book Grant.

Every year, Gorgias Press chooses two graduate students to receive the award for demonstrating excellence in any field within the scope of our publications.

Application Deadline: May 31, 2019.

See website for application details: <https://www.gorgiaspress.com/gorgias-book-grant> or email Dr Gemma Tully: gemma@gorgiaspress.com

SHORT COURSE IN RADIOCARBON DATING **AND BAYESIAN CHRONOLOGICAL** **ANALYSIS, OXFORD UNIVERSITY** **DEPARTMENT FOR CONTINUING** **EDUCATION**

- [Overview](#)
- [Programme](#)
- [Fees](#)
- [Tutor](#)
- [Application](#)

Overview

Hosted by NERC Radiocarbon Facility and Oxford NERC Doctoral Training Partnership

This course is aimed at researchers using radiocarbon and other techniques, including Quaternary geologists, palaeobiologists, archaeologists and marine geoscientists. The first two days of the course will cover key aspects of radiocarbon dating including sample selection, laboratory processes and Bayesian analyses of radiocarbon dates. Various aspects relating to the production and interpretation of radiocarbon dating will be taught by members of the NERC Radiocarbon Facility, based at both Oxford and East Kilbride. This course aims to become a core component of practical radiocarbon training in the UK.

The third day of the course will expand on this to look at the construction of Bayesian chronologies more generally, including those that rely primarily on other dating techniques. In this third day there will be a focus on using chronologies for environmental records. This day of the course will be suitable for those participating in the INTIMATE (Integrating ice core, marine and terrestrial records) initiative.

The programme has been formulated to introduce radiocarbon dating and other chronometric techniques to participants by exploring – through lectures, tours and tutorials – the key issues essential to the construction of reliable chronologies. This course has been developed by the NERC Radiocarbon Facility, which is NERC and AHRC funded and consists of the science-based archaeology node at Oxford (Oxford Radiocarbon Accelerator Unit: ORAU) and the environment node at East Kilbride (Scottish Universities Environmental Research Centre: SUERC), and as part of the University of Oxford NERC Doctoral Training Partnership.

The course will be held at the Department for Earth Sciences, South Parks Road, Oxford. Tea, coffee and a sandwich lunch will be provided each day for all participants.

Bed and breakfast accommodation, and dinner on the Monday and Tuesday evenings, are available to book as optional extras and are provided at Oxford University Department

for Continuing Education, Rewley House, 1 Wellington Square, Oxford, OX1 2JA. Rewley House is approximately 15 minutes walk from the course location.

National Occupational Standards for Archaeology: Contributes to the Performance criteria and Knowledge and Understanding requirements for CCSAPAC1 Research and analyse information to achieve objectives; CCSAPAC8 Undertake analysis and interpretation.

Programme details

The course will be held at the Department for Earth Sciences, South Parks Road, Oxford. Dinner and Accommodation will be at Rewley House, 1 Wellington Square, Oxford.

Monday 18 March 2019

Day One: Introduction to Radiocarbon Dating

9.00am *Registration and coffee/tea*

9.30am Introduction

Project planning and sample selection

Key problems

11.20am Pre-treatment and preparation

12.20pm Group discussions

1.00pm *Lunch*

2.00pm Radiocarbon measurement methods

Quality assurance

Evaluation of dates

Radiocarbon as a tracer

4.00pm Short lab tour

5.00pm *Break*

Tuesday 19 March 2019

Day Two: Radiocarbon calibration and Bayesian analysis

9:30am Introduction

Radiocarbon and the carbon cycle

Reservoirs and reservoir correction

Calibration of radiocarbon dates

Introduction to use of OxCal

1.00pm *Lunch*

2.00 pm Building Bayesian age models

Workshop on Bayesian age modelling in OxCal

Using outputs from Bayesian models

Mapping of radiocarbon data

5:00pm *Break*

Wednesday 20 March 2019

Day Three: Bayesian analysis of environmental chronologies

9:30am Introduction

Dating environmental records

Age depth modelling
Introduction to OxCal age-depth modelling
The INTIMATE chronological database
Lacustrine, Marine and Ice cores
1.00pm *Lunch*
2.00pm Using different types of dating information (14C, Ar-Ar, U-Series, Varve counts, Ice layer counting, OSL)
Applying age-depth models to proxy data
Correlating multiple records
5:00pm *Course ends*

There will be short breaks each day for coffee/tea at around 11.00am and 3.30pm, and a sandwich lunch at 1.00pm for all participants. Dinner is available at Rewley House at 7pm on Monday 19 and Tuesday 20 March for those wishing to book this additional option.

Accommodation

Accommodation for this three-day course is at Rewley House for Monday and Tuesday nights only.

Depending on availability it may also be possible to extend your stay, please enquire at the time of booking for availability and prices.

All bedrooms are modern, comfortably furnished and each room has tea and coffee making facilities, Freeview television, and Free WiFi and private bath or shower rooms.

Fees

includes	coffee/teas	&	sandwich	lunches	for	all	three	days:	£450.00
Dinner	Monday		night	@	Rewley		House:		£20.00
Dinner	Tuesday		night	@	Rewley		House:		£20.00
Single B&B (2 nights Monday & Tuesday at Rewley House): £158.40									

Payment

Payment of fees must be made in full at the time of booking. Please note that businesses and organisations can be invoiced on provision of a Purchase Order and completed application form. These can be emailed to the CWHE Programme Administrator, email: professional.arch@conted.ox.ac.uk

If you would like to attend part of the course, but not all, please contact Hazel Richards by emailing: professional.arch@conted.ox.ac.uk and she can arrange the booking for you.

Day 1 is a general introduction to radiocarbon dating

Days 1 and 2 will be relevant for archaeologists wishing to do Bayesian analysis

Days 2 and 3 are suitable for people interested in Bayesian analysis, who already have a working knowledge of radiocarbon dating

Day 3 is suitable for environmental scientists doing age-depth models and similar

Tutor

[Professor Christopher Ramsey](#)

Course Director

Director of the Oxford Radiocarbon Accelerator Unit, Author of Oxcal
Application

Please use the 'Book' or 'Apply' button on this page. Alternatively, please [contact us](#) to obtain an application form.

Terms and conditions

[Terms and conditions for applicants and students on this course](#)

Sources of funding

[Information on financial support](#)

Please visit the site: <https://www.conted.ox.ac.uk/courses/short-course-in-radiocarbon-dating-and-bayesian-chronological-analysis>

EΙΔΗΣΕΙΣ - NEWS RELEASE

NEW ZEALAND ACADEMIC OFFERS NEW EXPLANATION FOR ALEXANDER THE GREAT'S DEATH

It may have happened more than 2300 years ago, but the mystery of Alexander the Great's death could finally be solved, thanks to a University of Otago, New Zealand, academic.

Dr. Katherine Hall, a Senior Lecturer at the Dunedin School of Medicine and practising clinician, believes the ancient ruler did not die from infection, alcoholism or murder, as others have claimed.

Instead, she argues he met his demise thanks to the neurological disorder Guillain-Barré Syndrome (GBS).

In an article published in *The Ancient History Bulletin*, she says previous theories around his death in 323BC have not been satisfactory as they have not explained the entire event.

"In particular, none have provided an all-encompassing answer which gives a plausible and feasible explanation for a fact recorded by one source—Alexander's body failed to show any signs of decomposition for six days after his death.

"The Ancient Greeks thought that this proved that Alexander was a god; this article is the first to provide a real-world answer," Dr. Hall says.

Along with the reported delay in decay, the 32-year-old was said to have developed a fever; abdominal pain; a progressive, symmetrical, ascending paralysis; and remained *compos mentis* until just before his death.

Dr. Hall believes a diagnosis of GBS, contracted from a *Campylobacter pylori* infection (common at the time and a frequent cause for GBS), stands the test of scholarly rigour, from both Classical and medical perspectives.

Most arguments around Alexander's cause of death focus on his fever and abdominal pain. However, Dr. Hall says the description of him remaining of sound mind receives barely any attention.

She believes he contracted an acute motor axonal neuropathy variant of GBS which produced paralysis but without confusion or unconsciousness.

His passing was further complicated by the difficulties in diagnosing death in ancient times, which relied on presence of breath rather than pulse, she says.

These difficulties, along with the type of paralysis of his body (most commonly caused by GBS) and lowered oxygen demands, would reduce the visibility of his breathing. A possible failure of his body's temperature autoregulation, and his pupils becoming fixed

and dilated, also point to the preservation of his body not occurring because of a miracle, but because he was not dead yet.

"I wanted to stimulate new debate and discussion and possibly rewrite the history books by arguing Alexander's real death was six days later than previously accepted. His death may be the most famous case of pseudothanatos, or false diagnosis of death, ever recorded," she says.

Dr. Hall believes people are still interested in Alexander because he was a psychologically complex and complicated person who was viewed as a warrior-hero.

"While more modern analyses have attempted to be broader and more nuanced, whatever way people want to conceive of Alexander there is a desire to try and understand his life as fulsomely as possible.

"The enduring mystery of his cause of death continues to attract both public and scholastic interest.

"The elegance of the GBS diagnosis for the cause of his death is that it explains so many, otherwise diverse, elements, and renders them into a coherent whole."

Please visit the site: <https://phys.org/news/2019-01-zealand-academic-explanation-alexander-great.html>

**THE MIDDLE EAST IS DOTTED WITH
THOUSANDS OF PUZZLING KITE-SHAPED
STRUCTURES - SOME OF THEM ARE
COMPARABLE IN SIZE TO THE FAMOUS
NAZCA LINES IN PERU,
BY ROBIN GEORGE ANDREWS**

In late 2017, IT WAS announced that 400 elongated, stone-built structures, some the size of football fields, had been seen within Saudi Arabia's inhospitable Harrat Khaybar, one of several volcanic fields (harrats) scattered throughout the Arabian Peninsula. The identification of these so-called "gates," some of which may be up to 9,000 years old, generated significant media coverage. According to the New York Times, "Google Earth has unlocked the gates to ancient mysteries around the world," with these recently discovered structures, largely classified via satellite imagery, being the latest example of the power of archaeology from above.

These gates, however, are just one chapter of a far grander tale, one involving wild animals, climate change, volcanic eruptions, and a society of people whose identities are still highly elusive. "What's really fascinating to me," says Michael Petraglia, professor of human evolution and prehistory at the Max Planck Institute for the Science of Human History, "is that structures like these occur throughout the Middle East." In other words, the gates aren't the only notable ancient constructions of this ilk in the region. These other enormous stone structures, comparable in size to the famous Nazca lines in the Andes, are known as "kites."

Thanks to aerial surveys, satellite imagery, and reports by those on the ground, researchers know that there are thousands of kites throughout the Arabian Peninsula, and even as far afield as Kazakhstan and Uzbekistan. Over time, it has emerged that the origin story of the kites stretches across many thousands of years of ancient human history, but three major questions remain: What were they used for, how old are they, and who built them?

Although these structures have been spoken of for some time by people who still live in the region, one of the first known written descriptions of them comes courtesy of the British Royal Air Force's Flight-Lieutenant Percy Maitland, who serendipitously saw them a few years after the end of the First World War.

By the 1920s, much of the Middle East had been carved up in an agreement between the British and the French. While attempting to fend off revolts and revolutions in Iraq and Egypt, the RAF continued to fly between Baghdad and Cairo, to both chart the region and to deliver the post.

In an aerial surveillance report from 1927, Maitland describes seeing stone walls, both in lines and in radiating, more circular patterns, around 120 miles east of the Dead Sea in old lava fields. The nomadic Bedouin, he says, call them "The Works of the Old Men."

Maitland says that the structures are “very complicated and difficult to understand.” He mentions that the Arabs attribute them to Christians, which implies they are pre-Islam. “They certainly have the appearance of being of great antiquity,” he writes. The RAF came to call these structures “kites, because that’s what they looked like from above.

Over time, archaeologists began probing these kites up close. It became clear that they came in all shapes and sizes, and are often found with artifacts, ranging from cattle-depicting rock art to stone tools. Some feature cairns, which are potentially funereal structures. Describing many of them as “substantial,” Petraglia explains that there’s been a lot of time and effort dedicated to them. “There’s a real community-level feel to all these kites,” he says.

Rémy Crassard, an archaeologist at the French Center for Archaeology and Social Sciences in Kuwait, explains that in the 1990s, just a few hundred kites were estimated to exist. Now, we know that there are at least 6,000, from Saudi Arabia to the Sinai Peninsula. This is thanks to not just aerial surveys, but initiatives like the Globalkites project, of which Crassard is the leader, which studies the structures using both satellite imagery and fieldwork.

It turns out that the densest concentration of kites can be found in the Syrian and Jordanian part of the Fertile Crescent, a once-wet and vegetation-dense part of the region where some of humanity’s first civilizations arose. The density of kites decreases as you head into Armenia and Turkey, and up through Central Asia, although it’s not clear why this is the case.

The ages of the kites have long been ambiguous, but volcanic activity may provide a clue here. Károly Németh, an associate professor of geology at New Zealand’s Massey University, explains that the slow tearing apart (or rifting) of the region has fueled much of the volcanic activity in this part of the Middle East, and has produced numerous harrats which are home to many of the kites.

Today, seen from space, the harrats look positively Martian. They are pockmarked with small volcanic hills named scoria cones, frozen lava lakes, and explosively-generated pits named maar craters. Geochemical compositions vary, meaning the fields can be as dark as night or near-perfectly white.

Some harrats date back 30 million years, long before humanity made its debut. Conversely, in gate-riddled Harrat Khaybar, lava was still flowing until just 1,000 years ago. Archaeological evidence shows that people lived alongside these later eruptions, with some of these structures having actually had lava flow over them. This means that loose ages of some of them could be ascertained.

Crassard and his colleagues, considering this option, hoped to nevertheless get a more precise chronology. To wit, they dug around in some of the pits found within these kites, and uncovered plenty of animal remains.

Using multiple dating methods, they found that some of the kites in Jordan date back to the Neolithic period, maybe as early as 9,000 years ago. They are “much older than we expected,” Crassard explains.

He adds that, as these kites get further away from the Fertile Crescent, they also appear to get younger.

“The area is one of the most amazing archaeological, volcanological, and cultural sites in the world.”

These pits also hinted at what may be, in many cases, the kites’ purpose. In Arabia, Crassard’s team found gazelle remains; in Armenia, donkeys and goats; and in Kazakhstan and Uzbekistan, saiga. They suspected that these kites were used by hunters to corral and trap herds of animals, and when they got stuck in those pits, they couldn’t get out, and were slaughtered en masse.

This idea has been suggested before by other researchers, based on other archaeological evidence. For example, kites in Jordan seem oriented in such a way in which to intercept animal migration toward Syria. There are also eyewitness accounts of explorers, including the adventurer John Burckhardt, who in an 1831 tome describes a gazelle hunt in what was probably Syria. The people scared the gazelle into these kites, he wrote, sometimes by the hundreds. It’s also possible that cattle were simply confined within these kites, much like they are on farms today.

Petraglia, however, notes that the region’s kites aren’t all designed to one specification. Some have a very standardized function, while others are quite superficially distinct. Crassard agrees, explaining that his Globalkites team has used statistical and mathematical models to map things the kites do or do not have in common with each other.

Details will be revealed in upcoming publications, but it’s clear that although many are idiosyncratic, similarities in their designs are frequent.

Clues to their design may reside in the shifting climate, which changed dramatically while the kites were built.

Petraglia is part of the Palaeodeserts project, which is documenting one million years of environmental change in the Arabian Desert. He explains that from 10,000 to 6,000 years ago, humans there lived in the Early Holocene Wet Phase. Back then, the area was peppered with oases. It was more humid, a time marked by more rainfall, more lakes, and, says Petraglia, a “whole network of rivers across Arabia.”

Vegetation was a common sight, and agriculture and animal husbandry were practiced by pastoralists and sedentary people. “It was a much richer environment, in terms of resources,” he adds.

Hugo Murcia, a geologist at the University of Caldas in Colombia, notes that the volcanic debris left behind here clearly shows magma interacting with water—another clear sign that the area was once flowing with the stuff. “You can only imagine how beautiful these volcanoes would have been during the wet periods, with rivers and animals weaving around them,” says Petraglia.

More significantly, previous archaeological work has revealed that these kites are at least as old as the transition period from this wet phase to the contemporary hyper-arid phase. That suggests that the function of these structures may have changed over time as

humans adapted to the changing environment—but at present, it’s extremely difficult to say how.

“We haven’t told that story at all,” Petraglia says.

It doesn’t help, of course, that we still have no real idea who built the kites in the first place. Although it’s a huge misconception that people simply disappeared when the sand dunes arrived—people have always been living in Arabia, Petraglia emphasizes—the identities of the “Old Men” that Maitland referenced remain unknown.

Lava tubes, underground caverns formed by lava flows, also criss-cross throughout the region, and Petraglia hints that human remains might be found in some of them. These potential tombs are going to be excavated by Petraglia and his colleagues for the first time in early 2019, possibly shedding some light on this archaeological gap.

When asked who may have lived near the oldest kites, Crassard suggests that perhaps they were nomads, who came to these increasingly arid regions when animal prey migrated through the area. Alternatively, those hunters may have lived there all the time. “We have no idea,” he says.

The gates are perhaps even older than the kites: Although they remain segregated from the kites, there is at least one instance of a kite tangled up and perhaps sitting atop a gate. Like the kites, the gates are clearly visible from space; they were initially spotted by the Desert Team, a group of Saudi amateur archaeologists, via satellite imagery. This was then followed up by work led by David Kennedy, a professor of archaeology at the University of Western Australia, who wrote in his November 2017 paper that these gates were found exclusively within “bleak, inhospitable lava fields.” Little else is known about them.

Huw Groucutt, a postdoctoral fellow at the University of Oxford’s School of Archaeology, calls the gates both “very interesting” and “very strange.” He says he “cannot see any clear ‘functional’ purpose, so surely they are some kind of site where ritual activities of some kind took place,” but adds, “who knows what those could be.”

The only way forward for both the gates and kites is to conduct more systematic fieldwork of all kinds. “The area is one of the most amazing archaeological, volcanological, and cultural sites in the world,” Németh says. “It’s also under-researched.”

Important advances about the kites have certainly been made over the last few decades but compared to the hundreds of archaeological endeavors taking place in, say, Europe at any one time, there’s a pitiful amount happening in Arabia, says Petraglia. “The media might like to call the structures ‘mysterious’,” he explains, “but that’s just because archaeologists haven’t done their work yet.”

**Please visit the site: <https://www.atlasobscura.com/articles/kites-of-the-middle-east>
[Go there for pix]**

11,500-YEAR-OLD ANIMAL BONES IN JORDAN SUGGEST EARLY DOGS HELPED HUMANS HUNT

UNIVERSITY OF COPENHAGEN – FACULTY OF HUMANITIES—11,500 years ago in what is now northeast Jordan, people began to live alongside dogs and may also have used them for hunting, a new study from the University of Copenhagen shows. The archaeologists suggest that the introduction of dogs as hunting aids may explain the dramatic increase of hares and other small prey in the archaeological remains at the site.

Dogs were domesticated by humans as early as 14,000 years ago in the Near East, but whether this was accidental or on purpose is so far not clear. New research published in the *Journal of Anthropological Archaeology* by a team of archaeologists from the University of Copenhagen and University College London may suggest that humans valued the tracking and hunting abilities of early dogs more than previously known.

A study of animal bones from the 11,500 year old settlement Shubayqa 6 in northeast Jordan not only suggests that dogs were present in this region at the start of the Neolithic period, but that humans and dogs likely hunted animals together:

“The study of the large assemblage of animal bones from Shubayqa 6 revealed a large proportion of bones with unmistakable signs of having passed through the digestive tract of another animal; these bones are so large that they cannot have been swallowed by humans, but must have been digested by dogs,” explained zooarchaeologist and the study’s lead author Lisa Yeomans.

Lisa Yeomans and her colleagues have been able to show that Shubayqa 6 was occupied year round, which suggests that the dogs were living together with the humans rather than visiting the site when there were no inhabitants:

“The dogs were not kept at the fringes of the settlement, but must have been closely integrated into all aspects of day-to-day life and allowed to freely roam around the settlement, feeding on discarded bones and defecating in and around the site.”

Can new hunting techniques account for the increase in small prey?

When Yeomans and her co-authors sifted through the analyzed data, they also noted a curious increase in the number of hares at the time that dogs appeared at Shubayqa 6. Hares were hunted for their meat, but Shubayqa 6’s inhabitants also used the hare bones to make beads. The team think that it is likely that the appearance of dogs and the increase in hares are related.

“The use of dogs for hunting smaller, fast prey such as hares and foxes, perhaps driving them into enclosures, could provide an explanation that is in line with the evidence we have gathered. The long history of dog use, to hunt both small as well as larger prey, in the region is well known, and it would be strange not to consider hunting aided by dogs

as a likely explanation for the sudden abundance of smaller prey in the archaeological record,” said Lisa Yeomans.

“The shift may also be associated with a change in hunting technique from a method, such as netting, that saw an unselective portion of the hare population captured, to a selective method of hunting in which individual animals were targeted. This could have been achieved by dogs.”

Please visit the site: <https://popular-archaeology.com/article/11500-year-old-animal-bones-in-jordan-suggest-early-dogs-helped-humans-hunt/> [Go there for pix]

ARCHAEOLOGISTS FIND CLUES FOR 'IMPORTANT' AYYUBID SETTLEMENT, BY SAEB RAWASHDEH

Researchers are digging up hints of an important Ayyubid copper production site in Wadi Al Ghuwaybi, an American anthropological archaeologist said.

There is very little material at the site of Khirbat Nuqayb Al Asaymir (KNA) that dates from earlier than the late 12th century, and the material that seems to be later than the mid-13th century is from the surface of the site, said Ian Jones.

The archaeologist added that the site had material dating narrowly to the late 12th-mid-13th century, or the Ayyubid period.

"What we had was a site that was built in the late 12th or [probably] early 13th century, more than 500 years after the last major episode of copper production in the region, and it was occupied for a very short period — probably no more than 50 or 60 years," Jones noted in a recent interview with The Jordan Times.

Its importance is entirely within the context of the Ayyubid period in Jordan, he explained, adding that if it had not already been abandoned by the early Mamluk period, it went out of use in the very early part of this period.

According to Jones, who led the site's excavation, KNA seemed to have been important primarily during the 13th century expansion of the sugar industry under the Ayyubids.

Sugar required fairly substantial amounts of copper to produce boiling vessels, and the degree to which this corresponds to the amount of copper that another scholar has estimated was produced in Faynan during the Middle Islamic period is suggestive of a connection.

If there is a connection, Jones said KNA was likely the larger and more important of two Faynan copper production sites.

"Of course, beyond this, any excess copper could have been used to produce any number of copper implements... of this period, including coins, serving vessels, cosmetic implements, utensils and so on."

The archaeologist said it also appears that, during the later stages of the site, residents were also producing iron, and the presence of mixed copper/iron ore in the nearby mines may have been one reason for focusing investment on KNA.

Imported ceramics

The ceramics found at KNA surprised Jones, particularly for southern Jordan: "We don't tend to expect Middle Islamic period sites in the south to have much glazed pottery, and

if they do, we expect these to be relatively simple, probably locally-produced bowls with monochrome green or yellow glazes."

However, the excavations in which Jones participated found no locally produced pottery, and in surveys they found only two shards.

He said that if they include the German survey in the 1980s they would add one more, and possibly another few from Nelson Glueck's survey in the 1930s.

The researchers also found a few small shards from glazed cooking pots that were likely made in Beirut. However, Jones said the majority of glazed pottery they found was made up of underglaze-painted fritware, or "stonepaste" pottery.

These are wares that are painted — usually in black, but sometimes in other colours — under their glaze, which in the Ayyubid period was generally turquoise, colourless or much less commonly purple, Jones said.

"Stonepaste, or fritware, is an interesting type of ceramic made primarily of quartz, with smaller amounts of clay and ground glass. It was made in a number of different places during the Islamic periods, but what we had at KNA was all produced in Syria, mostly [if not entirely] in Damascus," Jones outlined.

The presence of stonepaste wares at a site suggests the presence of Ayyubid "political elites", said Jones.

If this is correct, the amount of fritware at KNA indicates the presence of Ayyubid administrators, which again hints at the importance of the site.

Answering questions on Islamic pottery

Islamic archaeologists are still searching for answers about wheel-made ware: "The assumption has been that wheel-made wares are more common at urban sites, and hand-made wares more common at rural sites."

However, researchers are not entirely sure. Mainly because the majority of data they have to work with comes from surveys, and Middle Islamic period wheel-made pottery can be hard to identify without deeper examinations.

Jones said that at some sites, the assumption "doesn't seem to hold up".

It is also possible that the amount of wheel-made pottery at KNA is high for southern Jordan, but the quantities of imported fritware are "very high".

Hand-made wares, and particularly painted hand-made wares, are present at urban sites, even if they often make up a lower percentage of the overall findings than at rural sites.

Nonetheless, it does seem to be the case that wheel-made wares are more common at urban sites in the Middle Islamic period, "although we can't say without more excavations — particularly at rural sites — how large this discrepancy is", Jones said.

"My own opinion is that the difference, at least in the 12th-14th century, is probably smaller than has previously been imagined."

Please visit the site: <http://www.jordantimes.com/news/local/archaeologists-find-clues-%E2%80%98important%E2%80%99-ayyubid-settlement>

**WHAT ANCIENT SEEDS FOUND IN
ARCHAEOLOGICAL EXCAVATIONS IN
ISRAEL TELL US - WELL-PRESERVED
SEEDS FOUND IN ARCHAEOLOGICAL DIGS
IN ISRAEL OFFER A SINGULAR GLIMPSE
INTO THE LIVES OF THE PEOPLE WHO
WERE NOURISHED BY THEM THOUSANDS
OF YEARS AGO, BY RONIT VERED**

The white sticky notes on the office cartons, handwritten or typed in a simple font, cite places such as Masada, City of David, Tel Safi and Ohalo. Each of the cartons, which lie on tall metal shelves, contain paper envelopes and boxes that hold fragments of information and slices of stories – in the form of charred seeds or bits of dried plants – that were discovered in archaeological excavations throughout the Land of Israel. If living seeds are capsules of information that store the genetic knowledge of plants, the seeds found in the digs attest, in addition, to the material and spiritual life of the people who grew, gathered and ate them. The seed survivors – pits of olives that were eaten and thrown away 8,000 years ago, or wheat grains that early inhabitants ate or used to make flour for bread – are no less exciting than the magnificent figurines or vessels unearthed in digs.

“What we’re doing as botanists or as archaeologists is to come to these people’s homes and check their pantry,” says Prof. Ehud Weiss, head of the Archaeological Botany Lab in the Department of Land of Israel Studies and Archaeology at Bar Ilan University. “That home existed 2,000 or 6,000 years ago, but then, as now, our pantry says a lot about who we are. The food we eat reflects our socioeconomic situation and is indicative of the society we live in and relations with the environment. A central question in archaeology is: Who were the people whose cultural remnants we uncover?”

“The information archaeological botany provides is fascinating, and relevant for understanding the human race. We are what we eat, and knowledge in our field has become so precise that we now have a high capability of classifying every plant we find in archaeological digs. With the aid of that information, it’s possible to reconstruct modes and customs of nutrition, economy, agriculture, religion and culture.”

Together with archaeologists who specialize in zoology, architecture or ancient art, the lab’s researchers and students take part in digs that bring to light the remnants of the past. “Not everything rots,” Weiss explains. “Some seeds are preserved because of extreme climatic conditions like dryness or cold, and other seeds survive by means of carbonization processes. When Nebuchadnezzar arrived in the Land of Israel, his soldiers burned settlements and houses with all their contents. When walls collapsed and allowed only a little oxygen to enter, a process of carbonization occurred that preserved tree trunks and seeds as they were morphologically. Owing to both climate and a history

replete with battles, invasions and conquests, the Land of Israel is a treasure chest of botanical finds from the past.”

Initial selecting, filtering and cleaning of remnants of a plant source are carried out at the archaeological site before continuing in the lab. It is there that the lengthy and exhausting work begins of identifying and classifying the plant remains, and of attempting to infer historical and cultural contexts from the findings.

To facilitate the work of classification, a comprehensive collection of plants from this country and neighboring lands has been created. In contrast to other seed collections, such as the Israel Plant Gene Bank, the lab’s collection contains all the types of plants in the Land of Israel (the Plant Gene Bank is currently focused on wild plants in danger of extinction and on those that are of importance for the human economy), and the goal is not necessarily to preserve them for purposes of future reproduction.

“We have a national collection that includes thousands of seeds and fruits of plants in the Land of Israel and its neighbors,” says Dr. Sue Frumin, manager of the lab. “We do not germinate them or ensure that they retain their vitality; what’s important for us is the morphological form, with the help of which we classify archaeological findings. One of our most important projects in recent years is transforming this vast collection, with its thousands of items, into a digital database. We scan the seeds in three dimensions. Each plant in the collection will have digital representation, and we hope the information will be available to people and researchers from around the world. Because of the diminished variety and the depletion of resources, some of what we have in the collection has become rare and hard to find in nature.”

Ancient beer?

The lab’s personnel tell riveting stories that shed light on the daily life of the country’s inhabitants in different periods – and on the lives of contemporary scholars who look into the past. “I did my Ph.D. on 23,000-year-old seeds from Ohalo, on the shore of Lake Kinneret,” Weiss says, laughing as he recalls the event. “I found barley grains that were astonishingly preserved, including one seed that started to sprout. Beer is made from germinated barley, and I, as a young doctoral student, thought I would be able to publish an article stating that I had found the world’s most ancient beer. For a whole week, day and night I went through all the barley grains from Ohalo. I turned them every which way, but only that one seed sprouted, apparently by chance. That was a hard week.”

Plants discovered in the Land of Israel in earlier periods, which today are found only in other regions, attest to climate changes and the nomadic routes of edible plants. Seeds of eggplant and shami mulberry, which are integral to today’s local cuisine, were discovered in Jerusalem in Abbasid-era cesspools, revealing the period in which these plants reached the region.

“The grape seeds we found in that dig make a really wild story,” Weiss notes. “The grape is an ancient plant in our region, but we are talking about Muslim Jerusalem, and we found thousands of them, representing six to eight tons of grapes. Did the Jerusalem Muslims actually drink wine, or was this a neighborhood of Jews and Christians? We’re talking about a significant amount, not two grapes that someone ate and spat out the seeds, and because there is hardly any research on the Muslim period it’s very exciting.

In general, on the subject of wine we try to map the findings from different periods – almost every dig has grape seeds – and we are participating in a study of the ancient local species of grapes, which differ from the European variety.”

Barley grains found in the Yoram Cave in a cliff of the Masada fortress was the basis for an intriguing study that was recently published in cooperation with eminent geneticists in the field of ancient DNA. “The grains were superbly preserved because of the dryness,” Weiss says. “We took barley grains from there and sequenced them. “Almost 86 percent of the genome was preserved. In the realm of ancient DNA, researchers are delighted sometimes when one percent of the sequence remains. This was the first time a barley genome 6,000 years old was sequenced, and it taught us a great deal.

“We compared it to a world genetic base of barley grains that was made by the German genome bank,” he continues, “and which confirms the hypothesis that the local wild barley was domesticated here and spread worldwide from this country. Potentially, the discoveries make it possible to take positive features from the ancient seeds to help us develop new types of barley and wheat. Archaeologists are perhaps occupied with the past, but always thinking about the future, and the thought that we can wield influence is exciting.”

Along with the collections of ancient seeds and the Land of Israel plant collection – which is kept in vaults behind locked doors – the lab contains findings (which ought to be on display in a museum open to the public) that invoke the fascinating history of botanical research in Israel. On display is a glass case containing stalks from the collection of Aaron Aaronsohn, the agronomist and Zionist activist who discovered wild wheat, or “mother of wheat.” Two years ago the laboratory received from Prof. Mordechai Kislev, founder of archaeological botany in Israel, the collection of the agronomist Ludwig Feiner. In the 1930s, Feiner collected and studied the huge variety of local species of wheat that had not survived. The old stalks, labeled in German in small, dense handwriting, are kept just as Feiner had stored them – in small cardboard and tin boxes that were originally used for cigars, stockings and sweets popular in early 20th century Palestine.

Please visit the site: <https://www.haaretz.com/israel-news/.premium.MAGAZINE-what-you-d-find-in-pantries-in-the-land-of-israel-6-000-years-ago-1.6845384> [Go there for pix]

4,000-YEAR-OLD BURIAL WITH CHARIOTS **DISCOVERED IN SOUTH CAUCASUS,** **BY OWEN JARUS**

An ancient burial containing chariots, gold artifacts and possible human sacrifices has been discovered by archaeologists in the country of Georgia, in the south Caucasus.

The burial site, which would've been intended for a chief, dates back over 4,000 years to a time archaeologists call the Early Bronze Age, said Zurab Makharadze, head of the Centre of Archaeology at the Georgian National Museum.

Archaeologists discovered the timber burial chamber within a 39-foot-high (12 meters) mound called a kurgan. When the archaeologists reached the chamber they found an assortment of treasures, including two chariots, each with four wooden wheels. [See Images of the Burial Chamber & Chariots]

The team discovered ornamented clay and wooden vessels, flint and obsidian arrowheads, leather and textile artifacts, a unique wooden armchair, carnelian and amber beads and 23 golden artifacts, including rare and artistic crafted jewelry, wrote Makharadze in the summary of a presentation he gave recently at the International Congress on the Archaeology of the Ancient Near East, held at the University of Basel in Switzerland.

"In the burial chamber were placed two four-wheeled chariots, both in good condition, [the] design of which represents fine ornamental details of various styles," Makharadze wrote. The chamber also contained wild fruits, he added.

While the human remains had been disturbed by a robbery, which probably occurred in ancient times, and were in a disordered position, the archaeologists found that seven people were buried in the chamber.

"One of them was a chief and others should be the members of his family, sacrificed slaves or servants," Makharadze told Live Science in an email.

A time before the horse

The burial dates back to a time before domesticated horses appeared in the area, Makharadze said. While no animals were found buried with the chariots, he said, oxen would have pulled them.

Other rich kurgan burials dating to the second half of the third millennium B.C. have also been found in the south Caucasus, said Makharadze in another paper he presented in February at the College de France in Paris. The appearance of these rich burials appears to be connected to interactions that occurred between nomadic people from the Eurasian steppes and farming communities within and near the south Caucasus, Makharadze said.

These interactions appear to have led to some individuals, like this chief, getting elaborate burials. The newly discovered armchair symbolizes the power that individuals

like the chief had. "The purpose of the wooden armchair was the indication to power, and it was put in the kurgan as a symbol of power," Makharadze said in the email.

The kurgan was found in eastern Georgia near the municipality of Lagodekhi and was excavated in 2012.

Please visit the site: <https://www.livescience.com/46513-ancient-chariot-burial-discovered.html> [Go there for pix]

MIN. OF ANTIQUITIES LAUNCHED SECOND PHASE OF DOCUMENTING INSCRIPTIONS IN SINAI, BY MUSTAFA MARIE

The Ministry of Antiquities began the work of the second phase of the project of documenting the rock inscriptions in the ancient area of South of Sinai.

Nadia Khedr, Head of the Central Department of the effects of the sea, explained that the second phase of the project aims to document the rock inscriptions scattered in the valleys of Sinai, which vary between hieroglyphics, Greek, Arabic among others.

Khedr further stated that the mission began its work documenting the inscriptions located in Wadi Omeira, which includes the names of the kings of the first family (dynasty).

Furthermore, Hisham Hussein, Director General of North Sinai and head of the mission, pointed out that the mission is working on the development of a database consisting of all rock inscriptions, which includes high quality images and coordinates for each inscription, in addition to the use of a number of modern techniques that contribute to retrieving what has disappeared from the ancient Inscriptions.

Hussein further stated that on the sidelines of this project, the Central Training Department of the South Sinai and Red Sea Training Center will organize a training course entitled "Documentation of Rock Inscriptions" to train archaeologists to document these historical inscriptions.

It is worth mentioning that the first phase of the project of documenting the rock inscriptions included the sites of Wadi al-Dom (Dom Marina) , Al-Silik, Al-Rasais and Al Ain Sokhna in the Suez Antiquities area.

Please visit the site: <http://www.egypttoday.com/Article/4/63246/Min-of-Antiquities-launched-second-phase-of-documenting-inscriptions-in>

WHY OUR ANCESTORS DRILLED HOLES IN EACH OTHER'S SKULLS, BY ROBIN WYLIE

Thousands of years ago, people were performing a form of surgery called "trepanation" that involves boring holes through a person's skull.

For a large part of human prehistory, people around the world practised trepanation: a crude surgical procedure that involves forming a hole in the skull of a living person by either drilling, cutting or scraping away layers of bone with a sharp implement.

To date, thousands of skulls bearing signs of trepanation have been unearthed at archaeological sites across the world.

But despite its apparent importance, scientists are still not completely agreed on why our ancestors performed trepanation.

Anthropological accounts of 20th-Century trepanations in Africa and Polynesia suggest that, in these cases at least, trepanation was performed to treat pain – for instance, the pain caused by skull trauma or neurological disease.

Trepanation may also have had a similar purpose in prehistory. Many trepanned skulls show signs of cranial injuries or neurological diseases, often in the same region of the skull where the trepanation hole was made.

But as well as being used to treat medical conditions, researchers have long suspected that ancient humans performed trepanation for a quite different reason: ritual.

The earliest clear evidence of trepanation dates to approximately 7,000 years ago. It was practised in places as diverse as Ancient Greece, North and South America, Africa, Polynesia and the Far East.

People probably developed the practice independently in several locations.

Archaeologists have turned up some of the best evidence for ritual trepanation ever discovered

Trepanation had been abandoned by most cultures by the end of the Middle Ages, but the practice was still being carried out in a few isolated parts of Africa and Polynesia until the early 1900s.

Since the very first scientific studies on trepanation were published in the 19th Century, scholars have continued to argue that ancient humans sometimes performed trepanation to allow the passage of spirits into or out of the body, or as part of an initiation rite.

However, convincing evidence is hard to come by. It is almost impossible to completely rule out the possibility that a trepanation was carried out for medical reasons, because some brain conditions leave no trace on the skull.

However, in a small corner of Russia archaeologists have turned up some of the best evidence for ritual trepanation ever discovered.

The story begins in 1997. Archaeologists were excavating a prehistoric burial site close to the city of Rostov-on-Don in the far south of Russia, near the northern reaches of the Black Sea.

The site contained the skeletal remains of 35 humans, distributed among 20 separate graves. Based on the style of the burials, the archaeologists knew that they dated to between approximately 5,000 and 3,000 BC, a period known as the Chalcolithic or "Copper Age".

One of the graves contained the skeletons of five adults – two women and three men – together with an infant aged between one and two years, and a girl in her mid-teens.

Finding multiple skeletons in the same prehistoric grave is not particularly unusual. But what had been done to their skulls was: the two women, two of the men and the teenage girl had all been trepanned.

Each of their skulls contained a single hole, several centimetres wide and roughly ellipsoidal in shape, with signs of scraping around the edges. The skull of the third man contained a depression which also showed evidence of having been carved, but not an actual hole. Only the infant's skull was unblemished.

The job of analysing the contents of the grave fell to Elena Batieva, an anthropologist now at the Southern Federal University in Rostov-on-Don, Russia. She immediately recognised the holes as trepanations, and she soon realised that these trepanations were unusual.

A German trepanning brace from the 18th Century (Credit: Science Photo Library)

They had all been made in almost exactly the same location: a point on the skull called the "obelion". The obelion is on the top of the skull and towards the rear, roughly where a high ponytail might be gathered.

Opening the skull in this location would have risked major haemorrhage and death

Less than 1% of all recorded trepanations are located above the obelion point. What's more, Batieva knew that such trepanations were even less common in ancient Russia. As far as she was aware at the time, there was just one other recorded case of an obelion trepanation: a skull unearthed in 1974 at an archaeological site remarkably close to the one she was excavating.

Clearly, finding even one obelion trepanation is remarkable. But Batieva was looking at five, all of them buried in the same grave. This was, and is, unprecedented.

There is a good reason why obelion trepanation is uncommon: it is very dangerous.

The obelion point is located directly above the superior sagittal sinus, where blood from the brain collects before flowing into the brain's main outgoing veins. Opening the skull in this location would have risked major haemorrhage and death.

This suggests the Copper Age inhabitants of Russia must have had good reason to perform such trepanation procedures. Yet none of the skulls showed any signs of having suffered any injury or illness, before or after the trepanation had been performed.

Among the 137 skulls, they found nine with conspicuous holes

In other words, it appeared as if all of these people were trepanned while they were completely healthy. Was their trepanation evidence of some sort of ritual?

It was an intriguing possibility. However, Batieva had to give up the trail. She had many more skeletons to analyse from all over southern Russia, and could not afford to get sidetracked by just a few skulls, however enigmatic.

Before she gave up, Batieva decided to search through Russia's unpublished archaeological records, in case any more strange obelion trepanations had been discovered but not reported.

Surprisingly, she got two hits. The skulls of two young women with obelion trepanations had been discovered years earlier: one in 1980 and another in 1992. Each one had been unearthed less than 31 miles (50km) from Rostov-on-Don, and neither showed any signs of having been trepanned for a medical reason.

This gave Batieva a grand total of eight unusual skulls, all clustered in a small region of southern Russia and potentially all of about the same age. A decade later, even more came to light.

In 2011, an international team of archaeologists was analysing 137 human skeletons. They had recently been excavated from three separate Copper Age burial sites around 310 miles (500km) south-east of Rostov-on-Don, in the Stavropol Krai region of Russia, close to the modern-day border with Georgia.

The archaeologists had not set out to discover trepanations. They were there to learn about the general health of the prehistoric inhabitants of the region. But among the 137 skulls, they found nine with conspicuous holes.

Southern Russia may have been a centre for ritual trepanation

Five of them were standard examples of trepanation. The holes had been made in a variety of different locations around the front and side of the skull, and all of the skulls showed signs of having suffered a physical trauma, suggesting that the trepanations had been performed to treat the effects of the injuries.

But none of the other four trepanned skulls showed any signs of damage or disease. What's more, all four had been trepanned exactly above the obelion point.

Quite by chance one of the researchers – Julia Gresky, an anthropologist at the German Archaeological Institute (DAI) – had already read Batieva's paper describing the unusual trepanations from the Rostov-on-Don region.

Now Gresky, Batieva and other archaeologists have teamed up to describe all 12 of the obelion trepanations from Southern Russia.

Their study was published in April 2016 in the American Journal of Physical Anthropology.

The 12 skulls would have been remarkable discoveries wherever they had been found. But the fact that they were all discovered in the same tiny corner of Russia meant that a connection seemed likely. If there was no link, the odds that a batch of such rare trepanations would turn up exclusively in southern Russia would have been exceedingly low.

Gresky, Bateiva and their colleagues argue that, while this idea is difficult to prove, the clustering of these unusual trepanations suggests that southern Russia may have been a centre for ritual trepanation.

The owners of the other skulls seem to have survived their operations

Maria Mednikova of the Russian Academy of Sciences in Moscow is an expert on Russian trepanation. She believes that trepanations in specific, dangerous areas of the cranium may have been performed to achieve "transformations" of some kind. She suggests that, by trepanning in these places, people thought they could acquire unique skills that ordinary members of society did not have.

We can only speculate as to why these 12 apparently healthy people were trepanned in such an unusual and dangerous way. But thanks to the trepanation holes themselves, we can infer a surprising amount about the fate of the people after they received their trepanation.

One of the 12 skulls belonged to a woman under the age of 25, who had been buried at one of the sites near Rostov-on-Don. It showed no signs of healing, suggesting that she died during her trepanation or shortly afterwards.

However, the owners of the other skulls seem to have survived their operations. Their skulls showed bone healing around the edges of the trepanation holes – although the bone never completely re-grew over the holes.

Three of the 12 skulls showed only slight signs of healing around the trepanation hole, suggesting that their owners only survived between two and eight weeks after the operation. Two of these individuals were women between 20 and 35 years of age. The third was an elderly person between 50 and 70 years old, whose sex could not be determined.

The other eight skulls showed more advanced healing. Based on what we know about bone healing today, these individuals probably survived for at least four years after their operations.

It appeared as if all of these people were trepanned while they were completely healthy

These eight survivors included all five of the people from the mass grave near Rostov-on-Don, whose bizarrely-trepanned skulls first attracted Batieva's attention almost 20 years ago.

The two men, two women and one adolescent girl had all survived with their obelion holes for years. The girl, who based on her skeleton was between 14 and 16 years old, must have been trepanned when she was no older than 12, and possibly much younger.

It is still possible that these 12 people were suffering from diseases or head injuries. In that case, the trepanning operation may have worked for at least eight of them.

But it is also possible that Batieva and her colleagues are right, and these people were trepanned for a ritual purpose. If that is true, we can only guess at what benefits they received – or believed they had received – throughout the rest of their lives.

Please visit the site: <http://www.bbc.com/earth/story/20160826-why-our-ancestors-drilled-holes-in-each-others-skulls>{Go there for pix}

EGYPTIAN SCHOOLBOY’S 1,800-YEAR-OLD LESSON TO GO ON DISPLAY - THE BRITISH LIBRARY TOOK THE EXERCISE OUT OF STORAGE AS PART OF AN UPCOMING EXHIBITION ON THE HISTORY OF WRITING, BY JASON DALEY

There’s something about that pad of lined newsprint with dashes down the center used by children to learn their letters that sends adults into a nostalgic revelry. Putting in the hours getting capital “T” straight and tall and lowercase “E” squat and round is a rite of passage, even in the age of keyboards. But practicing letters isn’t just a modern experience. Soon, the British Library will display an 1,800-year-old Egyptian wax tablet for a new exhibition on the history of writing that will look familiar to anyone whose had to learn their ABCs.

Mindy Weisberger at LiveScience reports the tablet, about size of a modern-day Kindle, was acquired by the library in 1892, but the public hasn’t seen it on display since the 1970s. The tablet has Greek letters scratched into it. A teacher wrote the first two neatly composed lines of aphorisms, which translated, read: “You should accept advice from a wise man only” and “You cannot trust all your friends.”

A student struggled to copy out the betas, zetas and thetas in a scraggly but passable hand on four lower lines. On another part of the tablet there is a multiplication table and a reading exercise present.

Peter Toth, co-curator of the exhibit at the library, tells Weisberger that the lesson wasn’t just about getting the letters correct. “It’s not only the hands and fingers but also the mind that is being instructed here,” he says.

While there’s no way to know exactly who the student and teacher were, it’s a good guess that the pupil was a high-status boy from a wealthy family, since formal education was reserved for the upper-class males.

If you’re wondering why an Egyptian student was learning his Greek letters, rather than hieroglyphics or a local language, that’s because in the 2nd century A.D., when this lesson was written, Egypt had been under Roman rule for almost 200 years following 300 years of Greek and Macedonian rule under the Ptolemy dynasty. Greeks in Egypt held a special status below Roman citizens but higher than those of Egyptian descent. Any educated person in the Roman world, however, would be expected to know Latin, Greek and—depending on where they lived—local or regional languages.

The type of wax tablet wasn’t just used by schoolchildren, either. The tablets—shallow frames filled with molten beeswax—were used for thousands of years in the Classical world for communication or taking notes. Once the wax dried, a writer employed a stylus to incise the tablet with words. A fan-shaped scraper on the other end of the stylus was

used to smooth over mistakes. Like an Etch-A-Sketch, the whole thing could be reheated and reused if necessary.

If the writing was important enough, it was then transcribed onto much more expensive papyrus or parchment for long-term preservation. Tiro, the slave and later freedman who served as Roman orator and statesman Cicero's secretary, notably, used the tablets to record his master's speeches, inventing a system of shorthand to do so, which took off and was practiced into the Medieval period.

While most of the wax used in other tablets found by archaeologists long ago has disappeared, Toth tells Weisberger it's likely the dry climate in Egypt kept this particular homework assignment as fresh as the day it was inscribed.

Along with the tablet, the Writing: Making Your Mark exhibition, which will debut April 26, 2019, and run through August 27, will use 100 artifacts to trace the history of the written word over five millennia and five continents. Other notable objects with stories to tell include William Caxton's 1476 edition of Canterbury Tales, the first book printed in England as well as a Chinese typewriter from the 1970s (more impressive than it sounds), in addition to examples from over 30 different writing systems.

Please visit the site: <https://www.smithsonianmag.com/smart-news/egyptian-schoolboys-1800-year-old-lesson-go-display-180971234/>

WHERE DO CATS COME FROM? BY **CLAUDIO OTTONI**

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Pest-control agent, object and symbol of value in past civilizations, companion animal, and Internet celebrity, the cat has long held a unique position in our collective consciousness. Across the centuries, cats have accompanied people all over the world along trade routes.

There are currently more than 1.2 billion feral and pet cats across all continents except Antarctica. But where do they come from?

Cats are enigmatic domesticates. They were not primarily exploited for their economic or subsistence value and the paucity of cat remains in the archaeological record has long hampered a systematic and complementary approach to the study of cat domestication. Cats were attracted to human settlements as scavengers or following the arrival of anthropogenic commensal rodents (rats and mice). Humans appreciated the presence of cats as they kept pests under control and in turn cats had easier access to food sources available around human settlements.

This so-called ‘commensal’ relationship most likely started 10,000 years ago in the first sedentary human communities growing cereals in the Near East, in particular in the Levant. The presence of cat remains in Neolithic contexts of Cyprus, where there is no evidence of native felid species, and in particular a complete skeleton found in association with a human burial dated to around 9,500 years ago, indicates that cats travelled with farming communities to the Eastern Mediterranean islands, and that they established a quite intimate and strong bond.

Besides the evidence from the Levant, a key source of information about the origins of cat-human relationship comes from Egypt.

Figurative art and iconographic depictions (including the popular “cat under the chair” motif) of Pharaonic Egypt was the longstanding source of the belief that cats were domesticated in Egypt. Zooarchaeological evidence of cat taming from an elite Predynastic cemetery suggests that the relationship between cats and humans in Egypt may have started as early as 5,700 years ago.

The paleogenetics of cat dispersal.

Recently, the analysis of the DNA contained in bones, teeth, claws and even hairs of more than 200 ancient cat specimens – a study conducted by the University of Leuven, the Royal Belgian Institute of Natural Sciences of Brussels and the Institute Jacques Monod of Paris – has shed new light on the history of cat domestication. Through cutting-edge ancient DNA techniques, we investigated the maternal ancestries (the maternally inherited mitochondrial DNA) of cats from various archaeological sites in Europe, Southwest Asia and Africa. The temporal depth and the geographic coverage of the samples made it possible to infer the original phylogeographic structure of cats (i.e.

the geographic distribution of genetically distinct cat populations in the past), something that archaeological surveys and genetic analyses of modern cats could not detect.

The study revealed that *F. s. lybica*, the ancestor of all modern domestic cats in Northern Africa and the Near East, was already present in southeast Europe 10,000 years ago – prior the arrival of farming communities in Europe during the Neolithic – and was distributed in the Anatolian peninsula since at least the Neolithic.

However, two distinct *F. s. lybica* genetic lineages were present on the two sides of the Bosphorus, and about 6,400 years ago cats carrying the Anatolian (and general Near Eastern) lineage appeared in late Neolithic contexts of southeast Europe. This suggests that the human-mediated movement of cats began in prehistoric times, corroborating the interpretation of the 9,500 year-old cat in Cyprus.

However, compared to other animal domesticates, cats were introduced to southeast Europe by farming communities at a later stage of the Neolithic.

A second, more relevant cat dispersal occurred during the Classical and Roman era, when a genetic lineage of African distribution detected in ancient cats from Egypt appeared in coastal sites of Turkey and in southeast Europe. Cats in Egypt were worshipped and during the Greco–Roman period, kept in temple precincts to be mummified. They were at total ease in domestic contexts, as witnessed by the depiction of the ‘cat under the chair’ theme, and the peculiar social and cultural context of the Egyptian society may have facilitated the evolution of a more tolerant disposition of cats towards humans. From pest-control agents in farming communities, in the Egyptian households cats probably turned into the companions that we know today. The increasing popularity of cats among Mediterranean cultures (e.g., the Phoenicians, Carthaginians, Greeks, Etruscans, and Romans) and their usefulness on ships infested with rodents and other pests presumably sparked their dispersal across the Mediterranean from Egypt.

North of the Alps, domestic cats appeared soon after the Roman conquest, yet remained absent outside the Roman territory until Late Antiquity. Further expansion took place in the Middle Ages, when it was compulsory for seafarers to have cats on board to safeguard food, ropes and leather material from rodents and other pests. Cats carrying the Egyptian genetic lineage were even found at the Viking port of Ralswiek, in Northern Europe.

The phylogeographic picture that we recomposed through the genetic lineages of ancient cats seemed to track the main routes of human trade over the Classical, Roman and Medieval era, and the trajectories of connectivity crossed the borders of the Mediterranean as we observed lineages belonging to cats from Asia (*F. s. ornata*) in the Roman port-site of Berenike, in the Red Sea coast of Egypt, and in two coastal Turkish sites. This was probably the result of intensive and direct trade connections between south Asia and the Mediterranean basin via the Indian Ocean and Red Sea, but possibly also via the Silk Road connecting central Asia with Anatolia.

Selection and human intervention during cat domestication.

While the maternal lineages of the mitochondrial DNA of ancient cats allowed us to track the routes of human-mediated dispersal, the study of a mutation in a nuclear gene added more insights on the coat colour pattern of ancient cats, in particular whether they possessed blotched or mackerel tabby markings. The tabby phenotype is common in both wild and domestic cats, but the two variants, mackerel and blotched, distinguish

respectively wild and domestic populations. The investigation of this phenotypic trait in the ancient cats that we analysed showed that the first occurrence of the mutation that causes the blotched tabby marking dates to the Ottoman Empire in Southwest Asia, and later increases in frequency in Europe, Southwest Asia and Africa. This suggests that selection for coat color (and most likely human-mediated breeding activity) occurred rather late in the history of cat domestication, as opposed to other domesticates like horses.

Importantly, cats were never selected for a peculiar task by humans; they already possessed in their wild state the predatory skills that made them useful to human communities: hunting mice and other pests that infested human grain storages (or households, ships and so on).

In the behavioural context of the Egyptian society cats developed a more tolerant attitude towards humans and became their companions, while maintaining their innate predatory skills and a sort of aloofness that is still a landmark of modern housecats. This is corroborated by the analysis of full genomes in modern cats, which recently suggested that the main differences between wild and domestic cats are at the level of behavioural traits.

On the contrary, most other domestic animals followed a pathway of domestication that at some point was strongly influenced by human manipulation aimed at selecting specific traits that could assist humans (for example for work or for food supply). This is true for livestock species, horses and also for the dog. The dog was the first animal to be domesticated. The extreme variation in size and shape we observe in domestic dogs stems from the fact that humans for a long time selected them to assist for specific tasks such as hunting, protection, and sled-pulling. Artificial selection (hence, targeted human manipulation) was introduced in cat domestication only very recently, in the 19th century, without any objective to select peculiar skills, except for generating ‘visible’ variation. This selection affected mostly the coat variation, not much the body shape and size, and led to the origin of most of the actual ‘fancy’ breeds.

Our ancient DNA study provides answers to longstanding questions concerning the domestication process of the cat, revealing that both Near Eastern and Egyptian cat lineages contributed at different times to the maternal genetic pool of domestic cats. However, cat domestication remains a complex, long-term and quite unconventional process (one may even argue that the cat is not actually domesticated) featuring extensive translocations that allowed admixture events between geographically separated cat populations at different points in time. In the future, the analysis of full ancient genomes will help to pinpoint the selective processes and the admixture episodes in play during the process of cat domestication, and unravel whether two independent domestication episodes occurred in the Near East and Egypt.

Claudio Ottoni is a post-doctoral fellow at the University of Rome “La Sapienza”.

For Further Reading

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Please visit the site: <http://www.asor.org/onetoday/2019/01/Where-Do-Cats-Come-From> [Go there for pix and better format of tables and map]

