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DNA of 6,000-year-old barley reveals its secrets The ancient grain from a remote cave near Masada is the oldest plant genome ever reconstructed, and has much to tell about agricultural history page 55

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ΣΥΝΕΔΡΙΑ - CONFERENCES/WORKSHOPS

HISTORICAL METALLURGY SOCIETY RESEARCH IN PROGRESS MEETING, TUESDAY 29TH NOVEMBER, 2016, DEPARTMENT OF METALLURGY AND MATERIALS, UNIVERSITY OF BIRMINGHAM

Dear colleagues,

Just a quick note to say that **Online Bookings** are open for the **Historical Metallurgy Society Research in Progress Meeting**. The event will be held on the Tuesday the 29th November, 2016 at the Department of Metallurgy and Materials, University of Birmingham. The registration fee is £15. Online bookings will open shortly.

The programme and booking form is also available on our website <http://hist-met.org/meetings/2016-research-in-progress-meeting.html>.

This year as well as an excellent range of topics and speakers, we will also have a keynote speaker Prof Murakami from Japan. He will share some of the research going on in archaeometallurgy in Japan.

Best Wishes,

Eleanor Blakelock
HMS Events officer

**INTERNATIONAL DISCUSSIONS IN
MYCENAEAN ARCHAEOLOGY ON (SOCIAL)
PLACE AND SPACE IN EARLY MYCENAEAN
GREECE, OCTOBER 5-8, 2016, ATHENS**

Dear colleagues,

We are pleased to announce the International Discussions in Mycenaean Archaeology on (Social) Place and Space in Early Mycenaean Greece, October 5-8, 2016 in Athens. The conference is organised by the Institute for Oriental and European Archaeology of the Austrian Academy of Sciences in cooperation with the Austrian Archaeological Institute at Athens. Please visit our website where you might want to download the program and abstracts: <http://www.orea.oeaw.ac.at/place-and-space.html>

Best wishes,

Birgitta Eder and Michaela Zavadil

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www.orea.oeaw.ac.at



FIRST INTERNATIONAL WORKSHOP **RELICS @ THE LAB, BRUSSELS, 27-28** **OCTOBER 2016**

Dear Colleague,

The KIK-IRPA is pleased to announce you the program of the first International Workshop **Relics @ the Lab** (Brussels, 27-28 October 2016).

The online registration is open. Check out our website:
<http://org.kikirpa.be/relicsatthelab/registration.php>

PROGRAM

Wednesday 26 October

14.00 – 18.00 Registration at the KIK-IRPA

Thursday 27 October

9.00 – 9.30 Registration with coffee and tea

9.30 – 9.50 Welcome and introduction by **Christina Ceulemans** (general director of the KIK-IRPA) and **Mark Van Strydonck** (head radiocarbon laboratory KIK-IRPA)

SESSION 1

Chair: **Anique de Kruijf** (Museum Catherijneconvent, Utrecht, The Netherlands)

9.50 – 10.10 **Julia M.H. Smith** (University of Glasgow, UK)
Late antique and early medieval relic-objects: an overview of the surviving evidence

10.10 – 10.30 **Ruth Noyes** (Wesleyan University, Newbury, USA)
'Ex ea tam ingenti Reliquiarum translatione & collocacione factum est.' A historiography of scientific relic studies and their early modern origins

10.30 – 10.50 **Eleanor Farber** (Research Laboratory for Archaeology and the History of Art, Oxford, UK)
Proposing Standard Guidelines for the Scientific Assessment of Relics

10.50 – 11.10 Discussion

11.10 – 11.30 Coffee and tea

SESSION 2

Chair: **Regula Schorta** (Abegg-Stiftung, Riggisberg)

11.30 – 11.50 **Caroline Polet** (Royal Belgian Institute of Natural Sciences, Brussels, Belgium)

Multidisciplinary study of the reliquary contents attributed to the bishop Jacques de Vitry (12-13th C. AD)

11.50 – 12.10 **Alexander Cherkinsky** (University of Georgia, USA)
Does these bones belong to St. Auratianus?

12.10 – 12.30 **Alexander Lehouck** (Abbey Museum of the Dunes, Koksijde, Belgium)
The Idesbald relics of the Abbey of the Dunes revealed (Koksijde-Bruges, Belgium)

12.30 – 12.50 Discussion

12.50 – 13.50 Lunch

SESSION

3

Chair: **Caroline Polet** (Royal Belgian Institute of Natural Sciences, Brussels, Belgium)

13.50 – 14.10 **Anthony J.T. Jull** (University of Arizona, Tucson, USA)
Artifacts, Relics and Radiocarbon

14.10 – 14.30 **Thomas Higham** (University of Oxford, UK)
New AMS Radiocarbon Dates and aDNA Studies of St John the Baptist Relics

14.30 – 14.50 **Raphaël Panhuysen** (University of Amsterdam, The Netherlands)
Deconstructing the story of the miraculously recovered skeleton of Ailbertus of Antoing

14.50 – 15.10 **Jamie Cameron** (University of Oxford, UK)
3D Visualisation of Reliquaries via Photogrammetry

15.10 – 15.30 Discussion

15.30 – 17.00 Coffee and tea - Poster session

Friday 28 October

8.30 – 9.00 Registration with coffee and tea

SESSION 1

Chair: **Georges Kazan** (University of Oxford, UK)

9.00 – 9.20 **Jussi-Pekka Taavitsainen** (University of Turku, Finland)
Dating relics with AMS

9.20 – 9.40 **Ana Cabrera-Lafuente** (Victoria and Albert Museum, UK)
Medieval Iberian Relics and their Woven Vessels: The Case of San Ramón del Monte (†1126) Roda de Isábena Cathedral (Huesca, Aragón)

9.40 – 10.00 **Anne Hedeager Krag** (University of Southern Denmark)
New light on silks in the reliquary shrine of St. Canute in Odense Cathedral, Denmark

10.00 – 10.20 **Anja Bayer** and **Regula Schorta** (Abegg-Stiftung Riggisberg, Switzerland)

The Textiles found in the Shrine of Saint Godehard in Hildesheim

10.20 – 10.40 Discussion

10.40 – 11.00 Coffee and tea

SESSION 2

Chair: **Thomas Higham** (University of Oxford, UK)

11.00 – 11.20 **Jeroen Reyniers** (KIK-IRPA, Brussels, Belgium)

What's inside the Thirteenth-Century Shrine of Saint Odilia? A Case of an Interdisciplinary Study

11.20 – 11.40 **Anja Neskens** and **Katrien Houbey** (Museum Maaseik, Belgium)

Saint Harlindis and Relindis

11.40 – 12.00 **Raphaël Coipel** (Conseil régional Hauts-de-France, France)

Project of St Aldegonde: analysis of a treasure

12.00 – 12.20 **Maria Lahtinen** (University of Turku, Finland)

Isotope analyses of the Turku cathedral skull relic and the reliquary fabrics

12.20 – 12.40 Discussion

12.40 – 13.40 Lunch

SESSION 3

Chair: **Mark Van Strydonck** (KIK-IRPA)

13.40 – 14.00 **Ingela Wahlberg** (University of Uppsala, Sweden)

Birgittine Reliquaries from Vadstena monastery: characteristic techniques and ornamentations by the Birgittine nun's

14.00 – 14.20 **Anique C. de Kruijf** (Museum Catherijneconvent, Utrecht, The Netherlands)

Preserved miraculously

14.20 – 14.40 **Fanny Van Cleven** (KIK-IRPA, Brussels, Belgium)

The Relic Treasure of Herkenrode: an online database

14.40 – 15.00 Closing discussion and further plans

15.00 – 17.00 Visit of the KIK-IRPA: Radiocarbon Laboratory, Textile Laboratory and Textile Conservation Studio

Poster presentations

1. **Ian Andrews** - *Considerations on the Dating and Design of Early Medieval Reliquaries and Book Covers*
2. **Aki Arponen** and **Ina Vanden Berghe** - *Red Fabrics in the Turku Cathedral Relic Assemblage*
3. **Montserrat A. Baez Hernandez** - xxx

4. **Jacek Bielak** - *The Reliquary Chapel of Palazzo Pitti in Florence. The Art Collection and Religious Devotion of Maria Maddalena d’Absburgo in 17th Century*
5. **Mathieu Boudin** - *An archaeological mystery revealed by radiocarbon dating of cross-flow nanofiltrated amino acids derived from bone collagen, silk, and hair: case study of the bishops Baldwin I and Radbot II from Noyon-Tournai*
6. **Ignace Bourgeois** - *A box full of surprises. Archaeologists find an ancient relic in St Rumbold’s Cathedral (Mechelen, Belgium)*
7. **Jamie Cameron** - *An Unidentified Head of Hair at Romsey Abbey, UK: New Scientific Insights*
8. **Mathilde Daumas** - *Behind the Saint Guidon shrine, a multidisciplinary approach of the relics*
9. **Guy De Mulder** - *Deposition of human bones in settlement contexts during the Bronze and Iron Ages. Some kind of protohistoric relics,*
10. **Hans Geybels** - *Medieval and early modern methods to authenticate relics*
11. **Kristof Haneca and Marjan Buyle** - *The reliquary of Saint-Dymphna: dating wood and bones*
12. **Laura Hendriks** - *Microscale radiocarbon dating from paintings to cultural heritage textiles*
13. **Georges Kazan and Jamie Cameron** - *The Relics Cupboard of St Paul’s Cathedral, Liège, Belgium: A Preliminary Survey*
14. **Friederike Leibe** - *Medieval textiles from the tomb of the founder of the Tegernsee Monastery*
15. **Caroline Polet** - *Study of the skull attributed to Saint Gerolphus (8th c. AD)*
16. **Gabriela Sanchez Reyes** - *Sanctity through the light or science: radiographic images on ceroplastic reliquaries*
17. **Sabine Schrenk** - *Turning tunics into relics*
18. **Annemarie Stauffer** - xxx
19. **Fanny Van Cleven, Jeroen Reyniers and Anton Ervynck (eds.)** - *“Met maagdelijke blik”: presentation of the study and conservation of the reliquary of Herkenrode*
20. **Tine Van Osselaer and Leonardo Rossi** - *Power in the blood. The material culture of non-approved cults (19th and 20th century)*
21. **Mark Van Strydonck** - *Radiocarbon dating of local saints*
22. **Konstantin Voronin and Mariya Kabanova** - *Interdisciplinary study of medieval 15th century Russian icons of the Our Lady Deksiokratusa “Milostivaja” (dendrochronological, radiocarbon, chemical-physical, historical and cultural studies)*
23. **Annemarieke Willemsen** - *Inner Beauty: Looking for Relics in Excavated Medieval Jewellery*

Your sincerely,

The organising committee

3RD CIRCULAR: DANTE MEETING ON DATING THE ANTHROPOCENE IN ENVIRONMENTAL ARCHIVES

Dear all.

please find the third circular of the DANTE ("Dating the Anthropocene in Environmental Archives: Bridging the gap between 210Pb and radiocarbon age dating") workshop that will be held on 19-21 October, Toulouse, France.

You can now register and submit your abstracts on <http://inpact.inp-toulouse.fr/PEAT3/>

Early bird registration is opened until 21 September and abstract submission until 15 September.

With more than 60 pre-registered participants, we are expecting a very successful exciting meeting and we hope to see you in Toulouse!

best regards.

Gaël Le Roux, on behalf of the organization committee.

Gaël Le Roux - chargé de recherche CNRS
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fax : 33 (0)5.34.32.39.01

"The wealth of the plains depends on the health of the mountains"

<https://sites.google.com/site/gaellerouxpro/home>

<https://sites.google.com/site/peattoulouse/home>

6^ο ΔΙΕΘΝΕΣ ΣΥΝΕΔΡΙΟ ΨΗΦΙΟΠΟΙΗΣΗΣ
ΠΟΛΙΤΙΣΤΙΚΗΣ ΚΛΗΡΟΝΟΜΙΑΣ - 6TH
INTERNATIONAL CONFERENCE ON
DIGITAL HERITAGE - EUROMED 2016, 31
ΟΚΤΩΒΡΙΟΥ - 5 ΝΟΕΜΒΡΙΟΥ 2016 -
FILOXENIA CONFERENCE CENTRE -
ΛΕΥΚΩΣΙΑ -ΚΥΠΡΟΣ

ΕΠΙΣΗΜΗ ΠΡΟΣΚΛΗΣΗ ΠΡΟΣ ΤΟΥΣ ΑΠΑΝΤΑΧΟΥ ΕΛΛΗΝΕΣ ΚΑΙ ΚΥΠΡΙΟΥΣ
ΕΠΙΣΤΗΜΟΝΕΣ

Στο 6^ο ΔΙΕΘΝΕΣ ΣΥΝΕΔΡΙΟ ΨΗΦΙΟΠΟΙΗΣΗΣ ΠΟΛΙΤΙΣΤΙΚΗΣ ΚΛΗΡΟΝΟΜΙΑΣ-
6th International Conference on Digital Heritage-
EUROMED 2016
31 Οκτωβρίου – 5 Νοεμβρίου 2016 -
Filoxenia Conference Centre-
ΛΕΥΚΩΣΙΑ -ΚΥΠΡΟΣ

Η μεγάλη συνάντηση της Διεθνούς Επιστημονικής Κοινότητας για την Πολιτιστική
Κληρονομιά της Ανθρωπότητας

Αγαπητοί Συνάδελφοι,

Έχουμε την τιμή να σας προσκαλέσουμε στο

EUROMED 2016
6^ο ΔΙΕΘΝΕΣ ΣΥΝΕΔΡΙΟ
ΨΗΦΙΟΠΟΙΗΣΗΣ ΠΟΛΙΤΙΣΤΙΚΗΣ ΚΛΗΡΟΝΟΜΙΑΣ-
6th International Conference on Cultural Heritage-

που διοργανώνει στην Κύπρο, με μεγάλη επιτυχία, από το έτος 2006 το
ΤΕΧΝΟΛΟΓΙΚΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΚΥΠΡΟΥ -ΤΕΠΑΚ- Εργαστήριο Ψηφιακής
Πολιτιστικής Κληρονομιάς και που φέτος θα πραγματοποιηθεί από **31 Οκτωβρίου**
έως και 5 Νοεμβρίου 2016 στη Λευκωσία, στο υπερσύγχρονο Filoxenia Conference
Centre-, που διαθέτει όλες τις προδιαγραφές για τέτοιου είδους επιστημονικές
διοργανώσεις.

-- ΠΛΗΡΟΦΟΡΙΕΣ : www.euromed2016.eu

**45TH COMPUTER APPLICATIONS AND
QUANTITATIVE METHODS IN ARCHAEOLOGY
(CAA) INTERNATIONAL CONFERENCE,
MARCH 14TH AND 16TH, ATLANTA,
GEORGIA, CALL FOR PAPERS**

The 45th Computer Applications and Quantitative Methods in Archaeology (CAA) international conference will be held between March 14th and 16th, in Atlanta, Georgia.

Alessandro Di Ludovico (La Sapienza, Università di Roma) and Vanessa Juloux (Ecole Pratique des Hautes Etudes, Paris) are hereby inviting you to submit papers to be presented at the session “Corpus of Analysis in the Research on Ancient Eastern Mediterranean and Western Asia: Encoding, Information Collection, Digital Collaboration, and Investigating Strategies”.

Deadline: October 28th, 2016.

Submit your proposal to the CAA OCS system: <http://ocs.caaconference.org/index.php?conference=caa&schedConf=caa2017&page=schedConf&op=cfp>

Abstract length: your paper should not be longer than 250 words including title, affiliations and key words.

Session: Corpus of Analysis in the Research on Ancient Eastern Mediterranean and Western Asia: Encoding, Information Collection, Digital Collaboration, and Investigating Strategies

Eastern Mediterranean and Western Asia are areas that have been affected in the past by intense movements and contacts among a number of different cultures, a large part of which still deserves to be properly outlined and identified. The methods that scholars can utilize to face such a challenge include very fruitful and promising support in quantitative approaches which, however, often remain experimental. The main problematic issue seems to be the lack of a debate in which the different approaches can be compared and coordinated, of course, taking into account the peculiarities of the research fields related to these regions, languages and cultures. The object of this session, therefore, is to provide just such an occasion for an actual debate on the strategies that consider how to organise and analyse the corpora of data, potentially with digital collaboration i.e. crowd-sourcing. Any kind of applications of old and new models and the logics involved in the study of cultural features can be included; the basic aim is to compare and share experiments in the fields of E-Philology, semantic annotation, data mining, open archives, digitization of information, automated integration of missing, incomplete or corrupted data, and the like. Philological works and any types of archaeological perspectives on written documents are warmly welcome. In any case, it is of course recommended that the adopted methodology be clearly described. The chronological range goes from the Prehistory to the Middle Ages, geographically covering all

regions from the Iranian plateau to the Hellenic peninsula, and from the Black Sea to North Eastern Africa and to the Red Sea area. Besides concrete applications with results, purely theoretical proposals - as well projects still in progress - are also welcome.

If you need more information or have questions, please do not hesitate to contact the organizers of this session:

Vanessa Juloux: <mailto:vanessa.juloux@ephe.sorbonne.fr> or Alessandro Di Ludovico: <mailto:alediludo@gmail.com>.

More information about the CAA 2017: <http://caaconference.org>

WORKSHOP ON FRUITS: “SOLVING MIXING PROBLEMS USING THE BAYESIAN MODEL FRUITS, DIETARY AND NON-DIETARY APPLICATIONS”, QUEEN’S UNIVERSITY, BELFAST, 24-25 OCTOBER, 2016

Good afternoon,

We would like to notify you of the upcoming workshop on FRUITS: “Solving mixing problems using the Bayesian model FRUITS, dietary and non-dietary applications”. The workshop will be held at Queen’s University Belfast (24-25 October, 2016).

During the workshop several topics of interest will be discussed (see list below). The workshop will offer plenty of hands on experience and participants are encouraged to model their own case studies. A talk will be delivered by Ricardo Fernandes (universities of Cambridge and Kiel) showing different application of FRUITS to mixing problems.

There is no participation fee, however, those interested in participating must send an email to Laura van der Sluis (lvandersluis01@qub.ac.uk) within the set deadline (17th of October 2016). In their email the submitters must specify if they want to present a case study for discussion. The number of case studies up for discussion will be limited, as is the number of participants. Participants are asked to bring their own laptops with the downloaded software. Furthermore, the purpose of the discussion is not to define which parameter values to be employed but rather to discuss the proper use of FRUITS.

It is advisable that workshop participants have some previous familiarity with FRUITS that can be downloaded and additional information obtained using the links below. During the seminar a forthcoming new version of FRUITS (3.0) will be presented which introduces several novel capabilities.

To download FRUITS 2.1.1: <https://sourceforge.net/projects/fruits/>

FRUITS

manual:

<https://sourceforge.net/projects/fruits/files/FRUITS%20%20manual.pdf/download>

Youtube channel with tutorials on the use of FRUITS:

<https://www.youtube.com/channel/UCxNWBKevwf4QprY7orl0q1Q>

Discussion group: https://groups.google.com/forum/#!forum/fruits_fernandes

Facebook page: <https://www.facebook.com/groups/589328911099893/>

Workshop topics:

- Installing FRUITS in different platforms (Windows, Mac, and Linux)
- Designing a FRUITS model instance to fit a specific problem (dietary and non-dietary applications)
- Model feasibility tests prior to implementation

- Importing data from datasheets. Saving, loading, and sharing FRUITS model instances
- Defining model uncertainties for all parameters (including target/consumer uncertainty)
- Non-dietary examples (e.g. geology or environmental research)
- Dietary examples (simple C & N models, models with multiple proxies, concentration vs. non-concentration dependent models, routed vs. scrambled models)
- Interpreting multiple model outputs (source contribution, fraction contribution, signal contribution from source)
- Adding prior information (assigning prior to different model estimates or parameters)
- Assigning prior relationships of equality or inequality among model parameters and defining prior strength
- Advanced dietary modelling (e.g. constraints on nutrient intakes, handling weighted contributions from protein and other nutrients, diet-to-consumer isotopic offsets dependent on protein quality or levels of protein intake)
- Handling FRUITS graphical outputs (raster and vector images, file types, exporting data points)
- Model robustness and convergence tests
- FRUITS and R
- FRUITS and OpenBUGS

Organisers:

Laura van der Sluis (Queen's University Belfast) Ricardo Fernandes (Kiel & Cambridge Universities)

**FROM PHYSICAL TO DIGITAL, FROM
INTERACTIVE TO IMMERSIVE: USES OF
THREE-DIMENSIONAL REPRESENTATION,
MIXED REALITY, AND MORE IN THE SHARING
AND EXPLORATION OF ARCHAEOLOGICAL
DATA," AT THE COMPUTER APPLICATIONS AND
QUANTITATIVE METHODS IN ARCHAEOLOGY
2017 CONFERENCE, MARCH 14-16, 2017,
GEORGIA STATE UNIVERSITY, ATLANTA,
GEORGIA, CALL FOR PAPERS**

We are pleased to invite papers for the session "From Physical to Digital, from Interactive to Immersive: Uses of Three-Dimensional Representation, Mixed Reality, and More in the Sharing and Exploration of Archaeological Data," at the Computer Applications and Quantitative Methods in Archaeology 2017 conference, to be held March 14-16, 2017, at Georgia State University in Atlanta, Georgia.

Innovations in digital recording have caused the amount of data collected during modern archaeological excavations to dwarf that collected only a few years ago – let alone in the excavations of the previous century. The thoughtful integration of digital methods into the process (from excavation to publication) can assist in more complete recording and, just as importantly, meaningful presentation and dissemination of these data. The integration into the digital picture of data from prior excavations and campaign seasons, which may have been recorded in different formats and following different methodologies, is also important. Digital publications, geospatial datasets, and 3D printed objects are examples of interactive approaches to this problem.

This is can be taken a step further with immersion, as modern approaches like Augmented, Virtual, and Mixed Reality allow us to create truly immersive experiences around the reconstruction, visualization, and presentation of data. In archaeology, interaction and immersion can serve at least two purposes:

- (1) Exhibition and display, which can include the digital supplements to publications and exhibits, physical reconstruction and replication, and virtual reconstruction of sites and artifacts, including those that no longer physically exist; and
- (2) The close examination of live datasets, which can run the gamut from database queries to the 3D rendering of archaeological data in situ for the purpose of discovery, analysis, and information sharing.

Archaeological data in particular are well-suited to Augmented and Virtual Reality for both presentation and dataset exploration, as GIS points and associated finds, which are inherently three-dimensional, connote possible shapes, models, and textures.

This session is intended to foster discussion about the uses of interactive and immersive technologies both in the field, and in the presentation and analysis of objects and datasets. Its format will be a combination of interactive presentation and discussion, with a specific emphasis on demonstrations of 3D reconstruction, Virtual/Augmented and Mixed Reality experiences, online presentation, and other interactive and immersive approaches to excavation, recording, and dissemination.

Our goal is to cultivate the community of practice and shared knowledge around these techniques and approaches, while working together to support the highest quality of research and dissemination of archaeological data in this digital age.

To submit a proposal, please visit <http://caaconference.org/2016/09/13/call-papersposters-open/>. The call for papers will close October 28, 2016. Following the conference, presenters will be invited to submit their papers for review and publication in the Conference Proceedings.

Jeffrey P. Emanuel
CHS Fellow in Aegean Archaeology & Prehistory Associate Director of Academic
Technology Harvard University
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COLLOQUIUM SPECTROSCOPICUM
INTERNATIONALE XL 9TH EURO-
MEDITERRANEAN SYMPOSIUM ON LIBS
CONGRESS PALACE, 11-16 JUNE 2017, PISA,
ITALY, FIRST CIRCULAR & CALL FOR
PAPERS

The 40th Colloquium Spectroscopicum Internationale (CSI XL) and the 9th Euro-Mediterranean Symposium on LIBS (9th EMSLIBS) will be jointly organized by the Institute of Chemistry of Organometallic Compounds of the National Research Council of Italy (CNR-ICCOM) at the Congress Palace in Pisa, Italy, from 11 to 16 June 2017.

The forthcoming CSI XL will have the support of Italian Chemical Society. It represents a historic forum among scientists presenting and discussing recent developments in fundamentals and applications in all branches of Spectroscopy. At the same time, the EMSLIBS Conference has traditionally transcended its original scope as a regional conference, gathering in the last editions a growing number of attendees from Europe and outside Europe. The 2017 Edition is going to be one of the major events in the LIBS history after the First International LIBS Conference (2000, Pisa), both in terms of attendance and quality of the presentations. The joint organization of the CSI and EMSLIBS events will have a positive impact on both conferences by stimulating synergisms among participants, as well as the level of participation, since participants and exhibitors will attend both events with a single registration.

Contributions are welcome on the following fundamental and applicative topics:

Fundamental and Techniques

Atomic Spectrometry (ICP OES, ICP-MS, GD, AAS, etc.);
Molecular Spectrometry (UV-Vis, NMR, Raman, IR, etc.);
Organic and Inorganic Mass Spectrometry (TIMS, MALDI, LC-MS, GC-MS);
X-Ray Spectrometry (XRF, XRD, XANES, PIXE, etc.);
Hyphenated Techniques;
Laser Spectroscopy (LIBS, LIF, Raman, etc.);
Vapor Generation & Sample Introduction Techniques;
Imaging Techniques;
Computational Spectroscopy;
Nuclear Techniques (Mössbauer Spectroscopy, Gamma Spectroscopy; NAA).

Applications

Materials (micro, surface, and interface analysis);
Environmental and Geochemical Analysis;
Food Analysis;
Speciation Analysis;
Clinical and Pharmaceutical Analysis;
Archaeometry and Cultural Heritage;
Biological Applications;
Mass Spectrometry in post-Genomics and Proteomics;

Miniaturisation and Nanotechnology;
Fuels and Biofuels.

Scientific Programme of CSI XL and 9th EMSLIBS consists of Plenary, Invited and Keynote Lectures, Oral Presentations and Poster Presentations. Plenary Lectures will be held in common sessions between CSI and EMSLIBS. The following renowned scientists (preliminary list) already accepted the invitation to present Plenary Lectures on recent developments in different fields of spectroscopy:

Prof. Marco Aurelio Zezzi Arruda, University of Campinas, Brazil

Prof. Annemie Boogaerts, University of Antwerp, Belgium

Prof. Montserrat Filella, University of Geneva, Switzerland

Prof. Javier Laserna, University of Malaga, Spain

Prof. X. Chris Le, University of Alberta, Edmonton, Canada

Prof. Richard Russo, Lawrence Berkeley National Laboratory, USA

More information will be found on the web sites of the two conferences.

Exhibition. The CSI and EMSLIBS event will provide an excellent opportunity for suppliers & sponsors to get visibility and to exhibit at the conference instrumentation, chemicals, consumables and sample preparation apparatus, relevant to the wide range of analytical spectroscopy. The exhibition areas are situated inside the Congress Palace, first floor (ground level) (www.palazzodeicongressi.pisa.it). The contact for exhibitors and sponsors is the CSI XL and 9th EMSLIBS Scientific Secretary, Dr. Stefano Legnaioli (s.legnaioli@pi.iccom.cnr.it; phone +39 055 3152221)

Grants for PhD Students & Young Researchers will be available upon application. Candidates are invited to present on-line application. Deadline for grants application is **31 January 2017** and notification of awarded grants will be notified to candidates within **28 February 2017**.

Social Programme includes Social Dinner, Concert, Pisa Excursion Wine Tasting Party. A dedicated social programme will be proposed for accompanying persons.

Registration & Abstract Submission. On-line registration is necessary before abstract submission through the conference website. A maximum of two abstracts (1 oral +1 poster presentation, or 2 poster presentations) is allowed for each registered participant. The deadline for abstract submission is **31 January 2017**. Acceptance of submitted contribution will be notified to the author within **28 February 2017**.

Registration Fees. Registration After 15 March 2017
fee entitles the participation to
the CSI XL and 9th EMSLIBS
events. Registration comprises
event documentation, including
the Book of Abstracts, Welcome
Cocktail, Coffee Breaks,
Lunches and Social events
(Social Dinner, Concert, Pisa
Excursion and Wine Tasting
Party). Accompanying person's
fee includes Welcome cocktail

and Social Events. Before 15 March 2017		
Regular	600 €	700 €
Students ¹	350 €	450 €
Participants from developing ² Countries	350 €	450 €
IUPAC Affiliates ³	540 €	630 €
Accompanying Person	150 €	150 €

**REHAB 2017 - 3RD INTERNATIONAL
CONFERENCE ON PRESERVATION,
MAINTENANCE AND REHABILITATION OF
HISTORICAL BUILDINGS AND
STRUCTURES, JUNE 14-16, 2017,
GUIMARÃES, PORTUGAL,
CALL FOR PAPERS**

Abstracts submission: October 31

Conference Overview

REHAB 2017 is a peer reviewed conference.

CONFERENCE TOPICS:

- Technologies for inspection and monitoring buildings performance and pathologies
- Seismic behavior of historical buildings
- Preservation and rehabilitation of historic buildings and structures: case studies
- Preservation and rehabilitation of historic centres
- Authenticity and built heritage
- Inclusivity of historic sites and buildings
- New materials and products for the rehabilitation of historic buildings and structures
- Sustainability principles and practices in the rehabilitation of historic buildings and structures
- Special chapter: earthen buildings

Visit the conference website for full details about the conference scope, topics and submission procedures at: <http://rehab.greenlines-institute.org>

Abstract Submission

Submit an abstract via the conference website: <http://rehab.greenlines-institute.org/> or contact the Conference Secretariat below.

Conference Secretariat

Secretariat REHAB 2017

Green Lines Institute for Sustainable Development
Av. Alcaides de Faria, 377 S12
4750-106 Barcelos, PORTUGAL

Telephone: + 351 253 815 037

Email: rehab2017@greenlines-institute.org

Please circulate this announcement to colleagues who may be interested in this conference.

Email Policy

Please note: We endeavor to e-mail you information relevant to your field. However, if you are now specializing in another field or if you no longer wish to be included in this list please use the remove link below.

Organized by:



7TH INTERNATIONAL WORKSHOP 3D ARCH
2017 - 3D VIRTUAL RECONSTRUCTION AND
VISUALIZATION OF COMPLEX
ARCHITECTURES AND ENVIRONMENTS,
NAFLIO, GREECE, 1-3 MARCH 2017

Dear colleagues and friends,

The 1st **UNDERWATER 3D RECORDING & MODELING** conference (<http://3dom.fbk.eu/files/underwater/index.html>) was held at the Villa Fondi di Sangro in Piano di Sorrento, Italy from April 16th to the 17th, 2015. The workshop was a great success, attended by 86 participants from 14 different countries.

Given the need to optimize the financial resources, we believe it is a great opportunity to promote a specific session about **UNDERWATER 3D RECORDING & MODELING** under the next 3D ARCH 2017 event. This will give everyone the opportunity to share their experiences about 3D reconstruction, modelling, accessing and understanding in subaquatic environments with a much wider community of experts of the sector.

The 7th International Workshop **3D ARCH 2017 - 3D Virtual Reconstruction and Visualization of Complex Architectures and Environments** will be held in Naflio, Greece, 1-3 March 2017. We are going to reserve at least one session entirely dedicated to methods and techniques for underwater 3D recording and modeling.

Therefore we want to invite you to submit an abstract **before 20 November 2016** and check out <http://www.3d-arch.org/> for farther information.

We look forward to meeting you in Naflio next year,

On behalf of the organizing committee,

best regards,

Fabio Menna

Dr. Fabio Menna
3DOM - 3D Optical Metrology Unit
FBK - Bruno Kessler Foundation
via Sommarive 18
38123 Povo-Trento, Italy

Phone: +39 0461 314446

Web: <http://3dom.fbk.eu/people/profile/fmenna>

Web: http://www.researchgate.net/profile/Fabio_Menna

Web: <http://www.fbk.eu>

Web: <http://3dom.fbk.eu/>

ΗΜΕΡΙΔΑ 2016 ΠΑΝΕΛΛΗΝΙΑΣ ΕΝΩΣΗΣ **ΣΥΝΤΗΡΗΤΩΝ ΑΡΧΑΙΟΤΗΤΩΝ**

Η Π.Ε.Σ.Α. διοργανώνει, για ένατη χρονιά, την Ετήσια Ημερίδα (2016) των Συντηρητών Αρχαιοτήτων και Έργων Τέχνης του Υπουργείου Πολιτισμού. Το πιθανότερο χρονικό διάστημα διεξαγωγής είναι η τελευταία εβδομάδα του Νοεμβρίου ή η πρώτη του Δεκεμβρίου 2016. Η ακριβής ημερομηνία και ο τόπος διεξαγωγής της Ημερίδας θα ανακοινωθούν σε εύλογο χρονικό διάστημα.

Αντικείμενο της ημερίδας θα είναι οι παρουσιάσεις Τεχνικών Εκθέσεων και Μελετών, Επεμβάσεων Συντήρησης και Αποκατάστασης Αρχαιοτήτων και Έργων Τέχνης, καθώς και Ερευνητικών Εργασιών. Δυνατότητα ανακοίνωσης έχουν όλοι οι Συντηρητές Αρχαιοτήτων & Έργων Τέχνης καθώς και όσοι άλλοι Επιστήμονες ενδιαφέρονται να παρουσιάσουν θέματα που άπτονται των ενδιαφερόντων της Συντήρησης Αρχαιοτήτων & Έργων Τέχνης.

Τα μέλη του Σωματίου μας θα μπορούν να συμμετέχουν ως εισηγητές ή ως σύνεδροι χωρίς οικονομική επιβάρυνση. Χωρίς οικονομική συνδρομή θα συμμετάσχουν επίσης και όλοι οι εισηγητές, ανεξαρτήτως αν δεν είναι μέλη. Οι Συντηρητές Αρχαιοτήτων και Έργων Τέχνης που δεν είναι μέλη της Π.Ε.Σ.Α. και επιθυμούν να μετέχουν ως σύνεδροι, θα καταβάλλουν συμβολικό χρηματικό αντίτιμο για τη συμμετοχή τους, το οποίο θα οριστεί από το Δ.Σ. και την Οργανωτική Επιτροπή. Το ίδιο ισχύει και για τους άλλους επιστημονικούς κλάδους που επιθυμούν να παρακολουθήσουν την ημερίδα ως σύνεδροι. Η Ημερίδα θα περιλαμβάνει προφορικές ανακοινώσεις καθώς και posters (ανακοινώσεις τοίχου).

Οι συγγραφείς ή ομάδες συγγραφέων που επιθυμούν να είναι υποψήφιοι για να ανακοινώσουν στην Ημερίδα 2016 (είτε προφορικά είτε με poster) θα πρέπει να το δηλώσουν ψηφιακά μέσω ηλεκτρονικής φόρμας στο σύνδεσμο: <http://goo.gl/forms/uNUI05zwmkeMqXf63>, όπου θα κληθούν να υποβάλλουν και το κείμενο (χωρίς φωτογραφίες ή άλλο υλικό) της περίληψης της εργασίας τους, με όριο τους 3500 χαρακτήρες. Η περίληψη θα πρέπει να παρέχει μια όσο το δυνατόν πληρέστερη περιγραφή του περιεχομένου της ανακοίνωσης βάσει του οποίου θα κριθεί η επιλογή της. Μέσα στην ηλεκτρονική φόρμα παρέχονται οδηγίες για τη σωστή συμπλήρωση της υποψηφιότητας.

(Παρακαλούμε για οποιαδήποτε άλλη πληροφορία εκτός της υποβολής των περιλήψεων απευθυνθείτε στην διεύθυνση της Π.Ε.Σ.Α.: pesa@pesa.com.gr).

Τελική ημερομηνία υποβολής των περιλήψεων των ανακοινώσεων είναι η 7η Οκτωβρίου 2016.

Οι επιλεγμένες εργασίες θα δημοσιευτούν στα «Πρακτικά της Ημερίδας 2015 της Π.Ε.Σ.Α.» που θα εκδοθούν το επόμενο έτος. Το πλήρες κείμενο για το τεύχος των πρακτικών θα παραδοθεί το αργότερο την ημέρα διεξαγωγής της Ημερίδας. Οι συγγραφείς θα ενημερωθούν με ηλεκτρονικό ταχυδρομείο για την επιλογή της εργασίας τους, από την Επιστημονική Επιτροπή. Η Επιστημονική Επιτροπή διατηρεί το δικαίωμα να μην επιλέξει μια εργασία λόγω ελλείψεων σε πρωτοτυπία, αδυναμία στην οργάνωση ή στη σύνταξη του κειμένου, εξαιρετικής απόκλισης από το αντικείμενο της Ημερίδας,

καθώς και λόγω παρέλευσης της ημερομηνίας υποβολής. Σε περίπτωση μη επιλογής, το υλικό θα επιστραφεί στο συγγραφέα.

Οι συγγραφείς των εργασιών, ως κάτοχοι των πνευματικών δικαιωμάτων, παραχωρούν με τη συμμετοχή τους στην Ημερίδα, την άδεια για τη δημοσίευση των εργασιών στο τεύχος των Πρακτικών καθώς και της περίληψης στην ιστοσελίδα της Π.Ε.Σ.Α.

Η παρούσα ανακοίνωση θα αποσταλεί στα μέλη της Π.Ε.Σ.Α. και θα αναρτηθεί στην ιστοσελίδα του Σωματείου. Γραπτή ενημέρωση θα γίνει επίσης και στις Υπηρεσίες και τους Εποπτευόμενους Φορείς του ΥΠ.ΠΟ.Α.

Για το Δ.Σ. της Π.Ε.Σ.Α.

Ο Πρόεδρος Ο Γεν. Γραμματέας

Ιωάννης Βερροϊόπουλος Βασίλειος Παναγιωτόπουλος

ΠΑΝΕΛΛΗΝΙΑ ΕΝΩΣΗ ΣΥΝΤΗΡΗΤΩΝ ΑΡΧΑΙΟΤΗΤΩΝ

Προφυλαίων 7, 11742 Αθήνα

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ΘΕΣΕΙΣ ΕΡΓΑΣΙΑΣ/ΥΠΟΤΡΟΦΙΕΣ –
JOB VACANCIES/FELLOWSHIPS

SEVERAL, AT THE MAX PLANCK
INSTITUTE FOR THE SCIENCE OF HUMAN
HISTORY (JENA, GERMANY)

The Department of Archaeogenetics at the Max Planck Institute for the Science of Human History in Jena, Germany, and the Initiative for the Science of the Human Past at Harvard University are launching a collaborative program that, at Harvard, draws on the Departments of Anthropology (Archaeology Program), History, Human Evolutionary Biology, and Organismic and Evolutionary Biology within the Faculty of Arts and Sciences, and the Department of Genetics at Harvard Medical School.

The new program is a long-term cross-disciplinary collaboration involving these various departments at MPI and Harvard's FAS and HMS, as well as other interested scholars and scientists at Harvard University.

In the framework of its multi-disciplinary investigation of the Ancient Mediterranean, the Max Planck Harvard project announces:

Up to three 5-year Full Fellowships in Biological Archaeology/Archaeometry and Archaeogenetics to sponsor graduate study leading to a PhD in Harvard University's Faculty of Arts and Sciences. The first fellowship(s) will be available to students admitted by Harvard for the academic year 2017-2018.

Students interested in being considered for the new fellowships and program should apply to present their work at a preliminary workshop to be held at Jena on 31st of October 2016.

Application Deadline 4th of October 2016

Scientific orientation of eligible research projects

In order to study human mobility and intercultural encounter and the associated exchange of genes, objects, practices and ideas, funded PhD projects should focus on the early history and/or archaeology of the Mediterranean. This region is crucial due to 1) the particular richness of its archaeological and historical sources, 2) its relevance for the formation of present-day European identities and 3) its crucial role in present-day migrations due to societal upheavals and transformations in the Near East and Africa.

Due to the existence of best possible evidence and sources for individual mobility as well as group migration in the Eastern Mediterranean, the Max Planck Harvard project activities will focus on three distinct historical topics, i.e., 1) the early historical globalization of the Eastern Mediterranean in the Late Bronze and Early Iron Age (ca. 1600-1000 BCE), 2) the so-called "Phoenician" and "Greek" migrations in the early 1st

millennium BCE throughout the Mediterranean and 3) the link between human mobility and the spread of pandemics in Antiquity.

These three historic topics will be approached by integrating 1) archaeology, 2) ancient history and 3) genetics. The Max Planck Harvard collaboration consists of three methodologically-based research groups that will work closely together to solve present interdisciplinary challenges.

In order to reach the objectives of the three research themes, PhD projects will be favored which cover two or more of the following aspects:

- 1) study of relevant burials of human individuals of the respective time-frame in the Eastern and Central Mediterranean from an archaeological point of view (including contextual analyses of associated objects, the context of the burial – e.g. within a settlement or necropolis etc.) and identify relevant material for scientific analysis.
- 2) Analysis of relevant environmental data (e.g. pollen profiles, speleothems near the relevant settlements; the new Harvard-Maine historical ice core).
- 3) genetic analyses and isotope ratio analyses (Sr, O) in order to trace individual mobility and genetic homogeneity within mobile groups and local societies.
- 4) genetic and pathologic/anthropologic analyses on the human remains, especially from mass burials, in order to identify the reason for the death of the individuals.
- 5) exhaustive and rigorous identification and computationally-assisted philological analysis of the previously identified written sources and the even more important set of newly identified written sources that document antiquity's great pandemics.
- 6) Correlation of the results of the scientific analyses with the archaeological analyses and with historical data from literary sources, along with the environmental data where relevant.
- 7) relations between different kinds and degrees of mobility at a particular settlement and local societal transformations, e.g. changes in material culture, architecture, consumption practices etc.

The Max Planck Harvard project doctoral tracks: program details These three new PhD fellowships are open for recent Bachelor or Master's degree holders with an excellent record and research experience in two or more of the fields delineated above. The new program ordinarily includes two years of coursework at Harvard and fulfillment of the standard requirements for the PhD in the relevant Departments of the Graduate School of Arts and Sciences of Harvard University, where candidates will acquire expertise in the topics and methods covered by the Max Planck Harvard project. After this period, doctoral students will ordinarily conduct substantial research for their PhD at the Max Planck Institute for the Science of Human History in Jena, Germany.

Funding will be granted to doctoral candidates for the entire duration of their PhD. Satisfactory fulfillment of all research and other requirements will lead to a doctoral degree awarded by Harvard University.

Given that coursework and the doctoral examination will be fulfilled at Harvard, applicants to this doctoral track necessarily need to possess all qualifications and documents required for admission by Harvard University's Graduate School of Arts and Sciences (GSAS) within the deadlines stipulated by GSAS. These include, for example, the Harvard application form, transcript of records, proof of language proficiency (e.g.

TOEFL), GPA, GRE, a writing sample, and all other relevant materials as specified by each individual department in FAS mentioned above. Further information at:
<https://gsas.harvard.edu/admissions/apply>.

Please note that the Max Planck Harvard project can only accept PhD candidates who are also eligible for admission as Harvard doctoral candidates.

Please apply online at:
https://s-lotus.gwdg.de/mpg/mjws/perso/shh_d001.nsf/application.

The Max Planck Harvard project is committed to employing individuals with special needs, and especially encourages them to apply. For further information about the recruitment symposium held in Jena, please visit the website:
http://www.shh.mpg.de/phd_archeogenetics

AMERICAN SCHOOL OF CLASSICAL STUDIES AT ATHENS - NEH FELLOWSHIPS

Deadline: October 31

Founded in 1881, the American School of Classical Studies at Athens (ASCSA) is the most significant resource in Greece for American scholars in the fields of Greek language, literature, history, archaeology, philosophy, and art, from pre-Hellenic times to the present. It offers two major research libraries: the Blegen, with over 107,000 volumes dedicated to the ancient Mediterranean world; and the Gennadius, with over 126,000 volumes and archives devoted to post-classical Hellenic civilization and, more broadly, the Balkans and the eastern Mediterranean. The School also sponsors excavations and provides centers for advanced research in archaeological and related topics at its excavations in the Athenian Agora and Corinth, and it houses an archaeological laboratory at the main building complex in Athens. By agreement with the Greek government, the ASCSA is authorized to serve as liaison with the Hellenic Ministry of Culture and Tourism on behalf of American students and scholars for the acquisition of permits to conduct archaeological work and to study museum collections.

Since its inception in 1994, the National Endowment for the Humanities (NEH) Fellowship program at the ASCSA has demonstrated its effectiveness by supporting projects for 50 scholars with distinguished research and teaching careers in the humanities.

Eligibility: Postdoctoral scholars and professionals in relevant fields including architecture or art who are US citizens or foreign nationals who have lived in the US for the three years immediately preceding the application deadline. Applicants must already hold their Ph.D. or equivalent terminal degree at the time of application. The ASCSA encourages younger scholars to apply.

Terms: Two to four fellowships, either five or ten months in duration. Stipend for a five-month project, \$21,000; for a ten-month project, \$42,000. Term must coincide with American School's academic year, September to June. School fees are waived, and the award provides lunches at Loring Hall five days per week. The NEH Fellow will pay for travel costs, housing, partial board, residence permit, and other living expenses from the stipend. A final report is due at the end of the award period, and the ASCSA expects that copies of all publications that result from research conducted as a Fellow of the ASCSA be contributed to the relevant library of the School. The NEH Fellow is required to send one copy of all books and electronic copies of articles to the NEH.

NEH Fellows will be expected to reside primarily at the American School of Classical Studies at Athens (though research may be carried out elsewhere in Greece), contribute to and enhance the scholarly dialogue, as well as contribute to and expand scholarly horizons at the School.

Application: Submit Senior Associate Membership application with fellowship online on the ASCSA web site by October 31. Link to:

<http://www.ascsa.edu.gr/index.php/admission-membership/student-associate-membership>.

The following items should be attached to the Associate Member application submitted online on the ASCSA web site:

1. Short abstract of the project (up to 300 words).
2. A statement of the project (up to five pages), including desired number of months in Greece, a timetable, explicit goals, a selected bibliography, the importance of the work, the methodologies involved, where applicable, and the reasons it should occur at the ASCSA.
3. Current curriculum vitae, including a list of publications. If not a US citizen, state US visa status /date of residence.
4. Three letters of reference from individuals familiar with applicant's work and field of interest. These letters should comment on the feasibility of the project and the applicant's ability to carry it out successfully. Include a list of names, positions, and addresses of the referees. Instruct recommenders to submit letters to application@ascsa.org by November 4.

The following criteria will be used by the Selection Committee when considering applications.

1. Are the objectives and approaches clearly stated and coherent?
2. Will the project result in an important and original contribution?
3. Are the research perspectives and methodologies appropriate?
4. Is the projected timetable reasonable for the tenure of the fellowship?
5. What resources are necessary? Does the ASCSA provide resources that are not available at the home institution?
6. Will residence in Greece contribute substantially to the success of the project?
7. Will residence at the School contribute to, and enhance, the scholarly dialogue at the ASCSA?
8. In what ways might this project expand scholarly horizons at the ASCSA?

NEH Fellowships

American School of Classical Studies at Athens
6-8 Charlton Street
Princeton, NJ 08540-5232

Web site: www.ascsa.edu.gr or <http://www.ascsa.edu.gr/index.php/admission-membership/grants>

E-mail: application@ascsa.org

The awards will be announced during February. Awardees will be expected to accept the award within two weeks of notification of funding, but no later than March 1.

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ΑΝΑΚΟΙΝΩΣΕΙΣ - ANNOUNCEMENTS

ΠΡΟΓΡΑΜΜΑ ΜΕΤΑΠΤΥΧΙΑΚΩΝ ΣΠΟΥΔΩΝ (MASTER) «ΕΦΑΡΜΟΣΜΕΝΕΣ ΑΡΧΑΙΟΛΟΓΙΚΕΣ ΕΠΙΣΤΗΜΕΣ»

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ΕΓΓΡΑΦΕΣ: 26 ΙΟΥΝΙΟΥ – 30 ΝΟΕΜΒΡΙΟΥ 2016

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2017 PETROGRAPHY INTERNSHIP AT THE INSTAP STUDY CENTER FOR EAST CRETE

The Institute for Aegean Prehistory (INSTAP) is pleased to announce the availability of a 1 month Petrography Internship to be awarded on a competitive basis to an eligible candidate during the period from January 15 through April 30, 2017 or September 1 through December 15, 2017 at the INSTAP Study Center for East Crete (SCEC). This internship is intended for students of archaeology, pottery, geology, and related fields. It is not necessary to have completed the Ph.D. to be eligible.

The Petrographer of the SCEC will supervise the intern. The scope of the internship will include projects involving the use of the petrographic microscope.

The Internship will be awarded in the amount of \$2,000 plus reasonable round-trip travel expenses. Applications must be received by **November 1, 2016** and awards will be announced by **December 30, 2016**. The internship is not renewable.

In addition to the completed application form, proposals should include a *curriculum vitae* of the applicant and two non-confidential letters of support: one from the applicant's sponsor (who should be a senior scholar) and the second from a scholar in the field. If the proposed work is intended to coincide with a leave-of-absence from an academic institution, a letter from the Chair (or comparable official) stating that courses scheduled to be taught by the applicant will be covered by someone with research interest in the Aegean Bronze Age/Early Iron Age should be included. If the applicant is employed, the research should be done during a leave of absence.

Consideration for the fellowships is open to all candidates meeting the stated requirements. Awards are made irrespective of race, gender, religion, national origin, age, disability, marital status, sexual orientation, and actual or perceived medical conditions. It is possible that in the absence of qualified candidates, the fellowship will not be awarded.

For further information and the application form, please visit <http://aegeanprehistory.net/grant-applications/>

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GRANTS TO ASSIST PUBLICATION THE MEDITERRANEAN ARCHAEOLOGICAL TRUST (MAT)

The Mediterranean Archaeological Trust (MAT), set up in 1959 for the promotion of the study of archaeology, invites applications for grants, made on a competitive basis, for expenses in 2017-18, in the preparation for final **publication** of material from archaeological **excavation** or **fieldwork** in the Mediterranean world, **excluding** subventions to publishers or publication of material not from a special excavation, or in symposia. Within the terms of the Trust, priority may be given to publication of Bronze Age sites. Grants for any amount, however small, will be considered, provided they expedite **publication**. The grants do not normally exceed GBP 2000.

Applicants should complete the application form (downloadable from the MAT web-site: <https://sites.google.com/site/medarchtrust/grants>), which should be sent no later than **31 January 2017** by **e-mail attachment**, to:

Dr Jai Clifford-Holmes: medarchtr@gmail.com^[1]_{SEP} (in case of difficulty, please contact him on: jai.clifford.holmes@gmail.com).

Please follow the instructions on the form, taking care to indicate the importance of the site, your qualifications, other sources of support, and the present or planned status and place of publication. Apply **in good time to** ensure that your case can be fully considered. The references (which are **essential**) should be sent directly by the referees **to the same e-mail address** and must meet the deadline of 31 January. Successful applicants will be informed in April 2017, when they will be asked to provide full bank details for payment. A report on the use of the grant must be submitted by 1st December 2017. Failure to do so will mean that grant applications for the following **three** years will not be considered.

IRISH RESEARCH **COUNCIL POSTGRADUATE SCHOLARSHIP** **SCHEME 2017**

The Irish Research Council has opened the 2017 call for the Government of Ireland Postgraduate Scholarship Scheme. This scheme offers full scholarships for suitably qualified individuals to pursue postgraduate research in any discipline at an eligible Higher Education Institute within Ireland. The deadline for applications is November 2nd 2016.

Full information on the scheme is available at this link:

<http://www.research.ie/scheme/government-ireland-postgraduate-scholarship-scheme-2017>

The Department of Classics, Trinity College Dublin welcomes enquiries and applications from well-qualified candidates who are interested in undertaking postgraduate research at Trinity College Dublin. We have an excellent track record of successful applications for Irish Research Council funding, both at postgraduate and postdoctoral levels.

The Department has a wide range of research strengths in all areas of Classics (language and literature; philosophy; history, Mediterranean archaeology: details of staff (including emails for contact) and their research interests can be found here: <https://www.tcd.ie/Classics/staff/> and a list of the wide-ranging topics of our current and recent students here: <https://www.tcd.ie/.../postgradu.../degrees/current-students.php>

Note that there is an internal deadline with the School of Histories and Humanities for review of draft applications (October 14, 2016), though applicants can carry on working on their application while the draft version is being reviewed. New applicants (i.e. those not already registered as research students) must have applied for admission as a research student through TCD's application portal by the Irish Research Council deadline of November 2nd 2016:

<https://www.tcd.ie/courses/postgraduate/research/schools/histories-humanities.php>

The Director of Postgraduate Teaching and Learning for the School of Histories and Humanities will be happy to be in contact with any potential applicants and answer queries:

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Unlocking Sacred Landscapes Network:
<http://www.ucy.ac.cy/unsala/>



THE GRECO-ROMAN ANTIMICROBIAL MINERALS PROJECT (GR-AMS)

The GR-AMs (2016-17) project funded by the **Wellcome Trust** (*Seed Award in the Humanities and Social Sciences*) sets minerals known in antiquity for their medicinal applications into a modern pharmacological context.

It examines them within the original natural and cultural landscapes from which they derived and evaluates them in the presence of the microbial life (bacteria, algae, fungi), the habitats of which they have always shared.

GR-AMs asks the question: could the antimicrobial activity of some minerals, mineral-rich waters and muds be due to the presence of that microbial life? Medicinal minerals have so far been tested selectively, and for individual properties, rather than holistically, as components of a diverse ecological habitat.

In antiquity, doctors, healers, seers, magicians or surgeons have approached natural (botanical or mineral) remedies holistically, based on sensory evaluation and empirical experimentation.

The **GR-AMs Project** takes on a similar approach, based on the study of specific landscapes long acknowledged for their therapeutic constituent parts. This approach is now backed by rigorous scientific testing and analysis.

Please visit the site: <http://www.gr-ams.com/>

INTERNET SITES

THE HUQOQ ELEPHANT MOSAIC

The Huqoq elephant mosaic has now been published online by National Geographic:

Please visit the site: <http://news.nationalgeographic.com/2016/09/mysterious-mosaic-alexander-the-great-israel/>

NERO'S ROTATING DINING ROOM

"The main dining table, which was round, rotated night and day, imitating the motions of the globe." The surprising construction mentioned by Suetonius in his biography of Nero has been found. On Palatine Hill (Rome), a Franco-Italian team of archaeologists discovered remains of a mechanism that could have allowed the rotation of the floor of the main dining room of the Domus Aurea—Nero's vast imperial palace.

Please visit the site: <https://news.cnrs.fr/videos/neros-rotating-dining-room> [Go there for video]

ΝΕΕΣ ΕΚΔΟΣΕΙΣ – NEW PUBLICATIONS

ARCHBULG XX 2016, 2 (2)

This issue has been printed. More info at: www.archaeologia-bulgarica.com

Lyudmil Vagalinski

editor

Archaeologia Bulgarica XX 2016 #2

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EΙΔΗΣΕΙΣ - NEWS RELEASE

ZEUS TEMPLE TO REGAIN ITS GLORY

The Zeus Lepsynos Temple from the 2nd century B.C. will be revived to regain its former glory, as archaeological excavations continue in the ancient city of Euromos in the western province of Muğla's Milas district.

Muğla Sıtkı Koçman University Archaeology Department academic and Euromos excavations head Abuzer Kızıl said the excavations in the ancient city had restarted five years ago after a 36-year hiatus.

Kızıl said cleaning, drilling, geophysical, mapping, culvert and excavation works have been carried out in recent years in the temple, agora, theater, necropolis, bath and walls of the ancient city.

He said they had important projects to carry out on the Zeus Temple, adding that lots of architectural ruins still existed in the temple.

Stating that the Zeus Temple was one of the best preserved temples in Anatolia, Kızıl added, "Among 17 pillars in the temple, 16 are still surviving with their beams. We will continue documenting the architectural elements of the temple."

He said their goal was to revive the blocks on the ground through a comprehensive restoration work and make the temple glorious again.

Kızıl said that due to its location, Euromos was one of the luckiest ancient cities in Anatolia, and that it was also one of the significant cities of Karia.

He also said they were working hard to best promote the Zeus Temple after quality restoration work. "Now the most important thing for us is to get rid of the concrete molds casted by late Prof. Ümit Serdaroğlu in the 1970s. It is really very difficult to do it. It makes us tired," he added.

Important for regional tourism

Kızıl said the ancient city of Euromos and the Zeus Temple had importance in terms of regional promotion and tourism in addition to its archaeological and scientific importance.

"We are still working on it. We enumerate each of thousands of pieces... one by one. The work in this temple is a doctorate thesis. We are working with a research assistant. At the same time, we are working with foreign academics for its restoration. I believe that after the restoration of broken columns the ancient value of this temple will increase."

Kızıl said university students and academics from Turkish and foreign universities participated in the work at the site and the General Directorate of Cultural Heritage and

Museums and the Muğla Governor's Office and the Metropolitan Municipality all made contributions.

The Zeus Temple is located by the wayside of the Milas-Söke highway. It is believed that it was constructed in the time of Emperor Hadrian

Please visit the site: <http://www.hurriyetdailynews.com/zeus-temple-to-regain-its-glory-.aspx?pageID=238&nid=103434>

EGYPT'S ANTIQUITIES MINISTER ATTENDS **LIFTING OF NEWFOUND BEAM OF** **KHUFU'S SECOND BOAT**

The newly found wooden beam may be the oars holder of King Khufu's second solar boat.

Minister of Antiquities Khaled El-Enany and Sakuji Yoshimura, director of the Japanese restoration team, were witness Wednesday to the lifting of a newly-discovered wooden beam of Khufu's second solar boat from its pit located to the north of the Great Pyramid of Giza.

The beam is eight metres long, 40 centimetres wide and four centimetres thick, with a number of U and L shaped metal pieces scattered over its surface.

After lifting it, the beam was taken to the laboratory created on the Giza Plateau by the Egyptian-Japanese Khufu Second Boat Project. El-Enany, Yoshimura and restorers inspected the beam, which will be subject to preliminary restoration in order to reduce its humidity to 55 per cent before it is then treated to consolidate its strength.

"This may be the beam that once held the oars of Khufu's second boat," Eissa Zidan, director of restoration in the project, told Ahram Online, adding that the beam was found during excavations carried out inside the pit on the boat's eighth layer.

He explained that it is too early to decide the original function of the beam, but that experts are sure that it is unique and not found in Khufu's first solar boat, now on display in a special museum on the Giza Plateau.

"What we can expect for now is that the beam may be the oar holder and the metal pieces may be frames to hold the oars and prevent friction with the boat body," Zidan said. He added that further study and excavation inside the pit would help Egyptologists know more about the beam.

El-Enany described the discovery as "very important" in revealing secrets about Khufu's boats. He said the Japanese excavators and restorers were working hard with their Egyptians colleagues to protect one of Egypt's most distinguished treasures.

He pointed out that when all the beams are lifted and restored the team would reconstruct the boat and put it on display with the first solar boat at the Grand Egyptian Museum (GEM) overlooking the Giza Plateau.

Until now, Mamdouh Taha, supervisor of the Khufu second boat project, said a collection of 700 wooden beams were recovered from the pit and 681 of them were restored in situ. A collection of 404 of the restored beam were transported to the GEM store waiting to be reconstructed.

The initial discovery of the second pit was in 1954. The first boat was removed piece by piece under the supervision of restoration expert Ahmed Youssef, who spent more than 20 years restoring and reassembling the boat.

The second boat remained in situ inside its pit until 1987 when it was examined by the American National Geographic Society in association with the Egyptian Office for Historical Monuments.

In 2009, a Japanese scientific and archaeological team from Waseda University headed by Yoshimura offered to remove the boat from the pit, restore and reassemble it and put it on show to the public.

The team cleaned the pit of insects and inserted a camera through a hole in the chamber's limestone ceiling in order to examine the boat's condition and determine appropriate methods of restoration.

After the lifting Wednesday, El-Enany embarked on an inspection tour around the Giza Plateau to check on work in progress amid the Plateau Development Project.

Ashraf Mohi, director general of the Giza Plateau, told Ahram Online that the development work aims at transferring the entrance to the Plateau to the Fayoum Road, where a visitor centre would be constructed to host visitors and give them information about the plateau and the monuments its displays before starting their visits.

The project, he continued, would also create a route for a taftaf (small electric train) to take visitors in a tour around the plateau's distinguished monuments.

New administration and inspectorate buildings would be constructed through the project, as well as a new lighting and security systems.

Please visit the site:

<http://english.ahram.org.eg/NewsContent/9/40/242108/Heritage/Ancient-Egypt/Egypt-antiquities-minister-attends-lifting-of-new.aspx>

DOES CHINESE CIVILIZATION COME FROM ANCIENT EGYPT? A NEW STUDY HAS ENERGIZED A CENTURY-LONG DEBATE AT THE HEART OF CHINA'S NATIONAL IDENTITY, BY RICARDO LEWIS

On a cool Sunday evening in March, a geochemist named Sun Weidong gave a public lecture to an audience of laymen, students, and professors at the University of Science and Technology in Hefei, the capital city of the landlocked province of Anhui in eastern China. But the professor didn't just talk about geochemistry. He also cited several ancient Chinese classics, at one point quoting historian Sima Qian's description of the topography of the Xia empire — traditionally regarded as China's founding dynasty, dating from 2070 to 1600 B.C. "Northwards the stream is divided and becomes the nine rivers," wrote Sima Qian in his first century historiography, the Records of the Grand Historian. "Reunited, it forms the opposing river and flows into the sea."

In other words, "the stream" in question wasn't China's famed Yellow River, which flows from west to east. "There is only one major river in the world which flows northwards. Which one is it?" the professor asked. "The Nile," someone replied. Sun then showed a map of the famed Egyptian river and its delta — with nine of its distributaries flowing into the Mediterranean. This author, a researcher at the same institute, watched as audience members broke into smiles and murmurs, intrigued that these ancient Chinese texts seemed to better agree with the geography of Egypt than that of China.

In the past year, Sun, a highly decorated scientist, has ignited a passionate online debate with claims that the founders of Chinese civilization were not in any sense Chinese but actually migrants from Egypt. He conceived of this connection in the 1990s while performing radiometric dating of ancient Chinese bronzes; to his surprise, their chemical composition more closely resembled those of ancient Egyptian bronzes than native Chinese ores. Both Sun's ideas and the controversy surrounding them flow out of a much older tradition of nationalist archaeology in China, which for more than a century has sought to answer a basic scientific question that has always been heavily politicized: Where do the Chinese people come from?

Sun argues that China's Bronze Age technology, widely thought by scholars to have first entered the northwest of the country through the prehistoric Silk Road, actually came by sea. According to him, its bearers were the Hyksos, the Western Asian people who ruled parts of northern Egypt as foreigners between the 17th and 16th centuries B.C., until their eventual expulsion. He notes that the Hyksos possessed at an earlier date almost all the same remarkable technology — bronze metallurgy, chariots, literacy, domesticated plants and animals — that archaeologists discovered at the ancient city of Yin, the capital of China's second dynasty, the Shang, between 1300 and 1046 B.C. Since the Hyksos are known to have developed ships for war and trade that enabled them to sail the Red and Mediterranean seas, Sun speculates that a small population escaped their collapsing

dynasty using seafaring technology that eventually brought them and their Bronze Age culture to the coast of China.

Pit of oracle bones in Anyang, China. Photo credit: Public Domain/Wikimedia Commons.

Sun's thesis proved controversial when the Chinese travel site Kooniao first posted it online in the form of a 93,000-character essay in September 2015. As the liberal magazine Caixin commented, "His courageous title and plain language attracted the interest of more than a few readers." That title was Explosive Archaeological Discovery: The Ancestors of the Chinese People Came from Egypt, and the essay was reproduced and discussed online, on internet portals such as Sohu and popular message boards such as Zhihu and Tiexue. Kooniao also set up a widely read page dedicated to the subject on the microblogging platform Weibo — hashtagged "Chinese People Come From Egypt" — which contains a useful sample of responses from the public. Some of these simply express outrage, often to the point of incoherence: "That expert's absurd theory randomly accepts anyone as his forebears," fumed one. "This is people's deep inferiority complex at work!" Another asked, "How can the children of the Yellow Emperor have run over to Egypt? This topic is really too pathetic. The important thing is to live in the moment!"

Other commentators have been more thoughtful. If they are not fully convinced, they are at least willing to entertain Sun's ideas. In fact, a rough count of comments from the intellectually curious outnumbers those of the purely reactionary by about 3-to-2. As one user wrote, "I approve. One has to look intelligently at this theory. Whether it turns to be true or false, it is worth investigating." Another wrote, "The world is such a big place that one finds many strange things in it. One can't say it is impossible." One more wrote, "One can't just sweepingly dismiss it as wrong or curse out the evidence as false. Exchanges between cultures can be very deep and distant."

Anticipating his critics, Sun wrote online that to examine anew the origins of Chinese civilization "may appear ridiculous in the eyes of some, because historians long ago stated clearly: We are the children of the Yan and Yellow Emperor." Historian Sima Qian took these legendary figures as the progenitor of the Han Chinese; and the Yellow Emperor's great-grandson, Yu the Great, as the founder of the semimythical Xia dynasty. These served as the origin stories for imperial China and continued to be credited for decades after the Republic replaced it in 1912, so that even the nation's most iconoclastic and rebellious sons — Sun Yat-Sen, Chiang Kai-Shek, and People's Republic founder Mao Zedong among them — have at some time or other felt the need to pay their respects at the Yellow Emperor's tomb. Even now, the oft-repeated claim that Chinese civilization is approximately 5,000 years old takes as its starting point the supposed reign of this legendary emperor.

Anti-Qing intellectuals began to examine critically the roots of Chinese civilization and, for the first time, seized on the idea that they lay in the West.

Unbeknownst to many, an anti-Qing Dynasty agitator was the first to publish (under a pseudonym) this claim for the nation's antiquity in 1903. As his nationalist ideology had it, "If we desire to preserve the survival of the Han Nation, then it is imperative that we venerate the Yellow Emperor." At that time, the Qing dynasty was in serious decline, its obvious backwardness compared with Western powers the cause of much soul-searching. Anti-Qing intellectuals began to examine critically the roots of Chinese civilization and, for the first time, seized on the idea that they lay in the West. The work that most

captured their imagination was that of the French philologist, Albert Terrien de Lacouperie, who in 1892 published the *Western Origin of the Early Chinese Civilization from 2300 B.C. to 200 A.D.* Translated into Chinese in 1903, it compared the hexagrams of the *Book of Changes* with the cuneiform of Mesopotamia and proposed that Chinese civilization originated in Babylon. The Yellow Emperor was identified with a King Nakhunte, who supposedly led his people out of the Middle East and into the Central Plain of the Yellow River Valley around 2300 B.C.

Sun Yat-Sen in Guangzhou, 1924. Photo credit: Public Domain/Wikimedia Commons.
Liu Shipei, the Peking University history professor and true author behind the pseudonymous chronology of the Yellow Emperor, was among the first to promote Sino-Babylonianism in books such as his 1903 *History of the Chinese Nation*. By 1915, the theory was widespread enough that the national anthem of the republic, commissioned by President Yuan Shikai referred to it obliquely, calling China “the famous descendant from Kunlun Peak,” which Chinese mythology locates in the far, far West. Another endorsement came from Sun Yat-Sen, founder of the Republic of China, who stated in his 1924 *Three Principles of the People* lectures that the “growth of Chinese civilization may ... be explained by the fact that the settlers who migrated from another place to this valley already possessed a very high civilization.”

It was the hope that since China shared the same ancestry as other great civilizations, there was no ultimate reason why it should not catch up with more advanced nations in Europe and America.

To these and other revolutionaries, Sino-babylonianism was not only the latest European scientific opinion. It was the hope that since China shared the same ancestry as other great civilizations, there was no ultimate reason why it should not catch up with more advanced nations in Europe and America.

Sino-Babylonianism fell out of favor in China during the late 1920s and early 1930s, when Japanese aggression escalated and a different nationalist politics took hold. Chinese historians, seeking to distance China from imperialist powers, cast a critical eye on Western origin theories and their earlier supporters. At around the same time, modern scientific archaeology was debuting in China. The discovery of Neolithic pottery in Longshan, Shandong, in 1928 showed that eastern China had been inhabited by indigenous groups before the Bronze Age migration Lacouperie had posited. In the same year, excavation of the city of Yin began. On account of the excellence of the Yin-Shang’s material culture — its famous oracle bones, for example, whose writing is the ancestor of the modern Chinese script used today — that polity is often considered the “root of Chinese civilization,” situated well within China’s borders, in present-day Anyang, Henan.

In the end, Western origin theories were replaced by what sounds like a compromise: a dual-origin theory of Chinese civilization. The view proposed that Eastern Neolithic culture moving West encountered Western Neolithic culture moving East, fusing to form the progenitors of the Shang. It held steady until the 1950s.

But Chinese archeology took a radical swing toward more extreme nationalism after the 1949 founding of the People’s Republic of China, when, in the words of the historian James Leibold, “China’s scientific community closed inward on itself.” Nationalism and

authoritarianism required the interpretation of archaeological evidence as proof that Chinese civilization had arisen natively, without outside influences. As the Sichuan University archaeologist — and eventual dissident — Tong Enzheng wrote in his fascinating account of the politicization of scholarship between 1949 and 1979: “Mao Zedong implemented a comprehensive anti-Western policy after 1949,” which expanded “already extant anti-imperialism ... ultimately becoming total anti-foreignism. Unavoidably, Chinese archaeology was affected.”

Maoism also required a belief that Chinese civilization had developed in accordance with “objective” Marxist historical laws, from a primitive band to a socialist society. Mao-era archaeologists thus strove to use their findings to prove these laws, legitimizing the status quo. As Xia Nai, the director of the Institute of Archaeology himself, wrote in a 1972 paper, “We archaeologists must follow the guide of Marxism, Leninism, and the thought of Mao Zedong, conscientiously fulfilling the great guiding principle of Chairman Mao, to ‘make the past serve the present.’” It’s no surprise then that during the Cultural Revolution meetings were convened under such absurd headings as “Using the Antiquities Stored in the Temple of Confucius in Qufu County to criticize Lin Biao and Confucius.” Meanwhile, revolutionary sloganeering found its way into scientific publications alongside the data.

Left: Oracle shell with inscriptions. Photo credit: Chabot Space and Science Center/Wikimedia Commons. Right: The Yellow Emperor. Photo credit: Public Domain/Wikimedia Commons.

Blatant ideological bias faded from scientific endeavors in the post-1978 reform era, but the ultimate goal of Chinese archaeology — to piece out the nation’s history — remained. The best-known example from that era is the Xia-Shang-Zhou Chronology Project, directly inspired by the achievements of Egyptian archaeology. State Councilor Song Jian toured Egypt in 1995 and was particularly impressed by a genealogy of the pharaohs that went back to the third millennium B.C. This prompted him to campaign for a project — included in the government’s ninth five-year plan — that would give Chinese dynasties a comparable record. Mobilizing over 200 experts on a budget of around \$1.5 million over five years, the Chronology Project has been considered the largest state-sponsored project in the humanities since 1773, when the Qianlong emperor commissioned the Siku quanshu, an encyclopedia roughly 20 times the length of the Britannica.

Some questioned the Chronology Project’s motives. One of the most prominent detractors was University of Chicago historian Edward L. Shaughnessy, who complained, “There’s a chauvinistic desire to push the historical record back into the third millennium B.C., putting China on a par with Egypt. It’s much more a political and a nationalistic urge than a scholarly one.” Others criticized the project’s methods and results. The Stanford archaeologist Li Liu, for instance, took issue with the fact that it regarded the Xia as historical and fixed dates for it, when there is still no conclusive archaeological evidence for its existence.

But the project also had defenders, including Harvard anthropologist Yun Kuen Lee, who pointed out that “the intrinsic relationship between the study of the past and nationalism does not necessarily imply that the study of the past is inherently corrupted.” The usefulness of archaeology in bolstering a nation’s pride and legitimacy — explaining and, to some extent, justifying its language, culture, and territorial claims — means that

most archaeological traditions have a nationalistic impulse behind them. Thus, in Israel, archaeology focuses on the period of the Old Testament; in the Scandinavian countries, it focuses on that of the Vikings. “The important question that we should ask,” Yun went on to say, “is if the scientists of the project were able to maintain scientific rigor.”

In some ways, Sun’s current theory is an unintended result of the Chronology Project’s scientific rigor.

In some ways, Sun’s current theory is an unintended result of the Chronology Project’s scientific rigor. At the project’s launch in 1996, he was a Ph.D. student in the radiation laboratory of the University of Science and Technology. Of the 200 or so items of bronze ware he was responsible for analyzing, some came from the city of Yin. He found that the radioactivity of these Yin-Shang bronzes had almost exactly the same characteristics as that of ancient Egyptian bronzes, suggesting that their ores all came from the same source: African mines.

Perhaps anticipating serious controversy, Sun’s doctoral supervisor did not allow Sun to report his findings at the time. Sun was asked to hand over his data and switched to another project. Twenty years after the start of his research and now a professor in his own right, Sun is finally ready to say all he knows about the Yin-Shang and China’s Bronze Age culture.

Although the public has mostly received Sun’s theory with an open mind, it still lies outside the academic mainstream. Since the 1990s, most Chinese archaeologists have accepted that much of the nation’s Bronze Age technology came from regions outside of China. But it is not thought to have arrived directly from the Middle East in the course of an epic migration. The more prosaic consensus is that it was transmitted into China from Central Asia by a slow process of cultural exchange (trade, tribute, dowry) across the northern frontier, mediated by Eurasian steppe pastoralists who had contacts with indigenous groups in both regions.

Despite this, the fascination with ancient Egypt appears unlikely to go away soon. As the Xia-Shang-Zhou Chronology project demonstrated, the sentiment has deep, politically tinged roots. These were on display again during President Xi Jinping’s state visit to Egypt in January to commemorate the 60th anniversary of diplomatic relations. On arrival, Xi greeted Egyptian President Abdel Fattah el-Sisi with an Egyptian proverb: “Once you drink from the Nile, you are destined to return.” They celebrated the antiquity of their two civilizations with a joint visit to the Luxor temple.

It remains to be seen whether Sun’s evidence will be incorporated into mainstream politics to prove a long-standing Sino-Egyptian cultural relationship. But if it is, the proverb Xi uttered after he set foot in Egypt will have been strangely prophetic.

Top image: Xuan Yuan Inquires of the Dao, scroll, color on silk. Courtesy of the National Palace Museum in Taipei/Wikimedia Commons.

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Please visit the site: <http://foreignpolicy.com/2016/09/02/did-chinese-civilization-come-from-ancient-egypt-archeological-debate-at-heart-of-china-national-identity/>

UNCOVERING A TEMPLE OF THE 11TH CENTURY BC

The winter 2016 Sidon season of excavation took place in January and February during the laying of the foundations of the future Museum of Sidon and continued into the summer months of regular excavation in August and September. The latest discoveries shed new light on the carrying out of cult rituals in the 2nd and 1st millennium BC, an aspect of this early culture that has, so far, remained largely unexplored in the Lebanon (Fig.1-5).

In Sidon however, there is remarkable evidence on the continuity of the ritual performance carried out in the 2nd and 1st millennium BC temples currently under excavation.

New rooms were uncovered in the temple of the 2nd millennium Canaanite period over 48 m-long. Some rooms have been excavated to a width of 6 m and 7 m but are found to continue under the road adjacent to the site which substantiates the monumental scale of this place of worship (Fig.6). One of the rooms had an altar covered with charred wood, most probably used during the ritual of sacrifice and the remains of animals found in the immediate vicinity certifies the practice of consuming sacrificial meat during the religious ceremonies carried out in the temple.

The model tabernacle (Fig.7-9), found on the floor of room 2, is one of the most unique objects of ceremonial worship found in Sidon. It will be exhibited in the future museum. Shaped like a miniature portable shrine it represents a symbolic cultic construction, a pseudo-temple, a substitute for the actual temple in which a divine effigy would be placed. In many cases the divinity would have been the fertility goddess Astarte also known as Anat, who was associated with the lion, the dove and the lunar crescent. The facade of the Sidon tabernacle is surmounted by one of Astarte attributes, a lion's head with incised eyes. The animal featured a broken tongue hanging out of his mouth to allow the flow of liquid through a hole on the top of the animal's head. The door of this miniature sanctuary, which is the same height as the model itself, is flanked by two perforated protrusions indicating that the door was closed with a string.

In order to ensure the purity of the site, pleasant odorous substances, such as incense, would have been lit which accounts for the discovery of new transportable incense burners (Fig.10-11). Due to its light weight and the narrowness of its handle, it fits comfortably into the palm of the hand and is also easy to handle. The practice of burning perfumes in clay burners would eventually evolve into using bronze incense burners manufactured in Phoenician workshops and exported far and wide across the Mediterranean.

In Sidon, graves were dug outside temples. However, the dead were looked after by the living and funeral banquets took place during commemoration ceremonies in honour of ancestors.

A jug (Fig.12-13) found in a grave indicates how an object was adapted to the context where it was found. This jug, decorated with the semblance of a necklace around the

neck of an individual, was discovered in a grave dating back to the beginning of the 2nd millennium BC. The grave contained two individuals including a teenager of at least 12 years old and a child of between 3 to 4 years. The two individuals were buried at about the same time. The jug (Fig.12-13), which had been deposited with the two children, had been transformed into an anthropomorphic container with the addition of two breasts on the shoulder of the vessel thus creating a new style combination and with the additional objective of conferring a mother like-image to this jug and thus a maternal presence to accompany the children in death.

Another very important historical period was excavated this season, namely the 11th century BC. During this era the Levantine coast, including Ras Shamra-Ugarit, was destroyed by the Sea peoples. However, the newly uncovered Phoenician temple in Sidon (Fig.14-16) shows a remarkable continuity of occupation and therefore, unlike elsewhere in the region, has no evidence of destruction during this period with the city proven to have been continuously occupied, without interruption, until the 7th century BC. Active feasting activity took place within the temple as witnessed by the quantity of local pottery as well as an assemblage of Greek banquet wares including plates manufactured exclusively for export to the Orient. The assemblage of Greek feasting pottery found in this Sidon temple is dated to before the introduction of the practice of symposia in the Aegean and in Italy. An alabaster spoon in the shape of a lotus bud painted in red (Fig.17), a decorated piece of bone (Fig.18), a faience neckless (Fig.19) and a beautiful engraved comb (Fig.20) were found in this temple.

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ANCIENT SEEDS TO BE RESURRECTED

Wheat and sesame seeds dating back 2,800 years ago that were taken from an excavation in an ancient castle in the eastern Van province will soon be brought back to life.

Ancient wheat and sesame seeds were discovered during excavations that began on Çavuştepe Castle in 2014 under the direction of Van Yüzüncü Yıl University Archaeology Department Professor Rafet Çavuşoğlu.

Çavuştepe Castle, which was built in the eighth century B.C. by Urartian King Sarduri II and has survived along with cisterns, city walls, temples and palace structures, is located in the Gürpınar district, 25 kilometers from the city center.

"Three cereal storages were found during the excavations in the castle," Çavuşoğlu said. "The castle is on the trade route through northwestern Iran, thus the findings may reveal some important information about trade at that time."

The seeds, confirmed to be 2,800 years old, will now be regenerated in a laboratory environment.

Çavuşoğlu said the cereals cultivated from Gürpınar used to be preserved in storages in the castle.

"The ceramic containers in which the cereals were stored are called pithos. Most of the harvests used to be kept in these containers," Çavuşoğlu said.

"We packed the wheat and sesame with due care. We will analyze these seeds in laboratories. If the seeds were carbonized by themselves, the possibility of regenerating them is quite high. However, if it was because of a fire, we have less chance of resurrecting them."

Please visit the site:

<http://www.hurriyetdailynews.com/.aspx?pageID=238&nID=103555&NewsCatID=375>

DNA OF 6,000-YEAR-OLD BARLEY REVEALS ITS SECRETS THE ANCIENT GRAIN FROM A REMOTE CAVE NEAR MASADA IS THE OLDEST PLANT GENOME EVER RECONSTRUCTED, AND HAS MUCH TO TELL ABOUT AGRICULTURAL HISTORY

Barley grains from the Chalcolithic period 6,000 years ago have become the oldest plant genome ever to be sequenced, announced a team of Israeli and international researchers in the journal Nature Genetics.

The barley grains and tens of thousands of other plant remains were retrieved from the remote Yoram Cave near one of Israel's most popular heritage sites, the famous Masada fortress overlooking the Dead Sea.

The painstaking excavation process was headed by Uri Davidovich from the Institute of Archaeology, The Hebrew University of Jerusalem; and Nimrod Marom from the Zinman Institute of Archaeology, University of Haifa. Ehud Weiss of Bar-Ilan University in Ramat Gan led the archaeobotanical analysis.

"These archaeological remains provided a unique opportunity for us to finally sequence a Chalcolithic plant genome. The genetic material has been well-preserved for several millennia due to the extreme dryness of the region," explained Weiss.

In order to determine the age of the ancient seeds, the researchers split the grains and subjected half of them to radiocarbon dating while the other half was used for DNA extraction.

"For us, ancient DNA works like a time capsule that allows us to travel back in history and look into the domestication of crop plants at distinct time points in the past," said Johannes Krause, director of the department of archaeogenetics at the Max Planck Institute for the Science of Human History in Jena, Germany.

Most examination of archaeobotanical findings has been limited to the comparison of ancient and modern specimens based on their form and structure. Studying plants on the genomic level reveals many more details. Until now, only prehistoric corn has been genetically reconstructed.

It is known that wheat and barley were already grown 10,000 years ago in the Fertile Crescent, a sickle-shaped region stretching from present-day Iraq and Iran through Turkey and Syria into Lebanon, Jordan and Israel.

"It was from there that grain farming originated and later spread to Europe, Asia and North Africa," said Tzion Fahima of the University of Haifa, where modern wild forms of these two crops are studied at the Institute of Evolution.

Nils Stein, who directed the comparison of the ancient genome with modern genomes at the Leibniz Institute of Plant Genetics and Crop Plant Research in Gatersleben, Germany, said the Chalcolithic seeds greatly differ genetically from the wild forms found today in the same region.

"However, they show considerable genetic overlap with present-day domesticated lines from the region," he said. "This demonstrates that the domestication of barley in the Fertile Crescent was already well advanced very early."

"This similarity is an amazing finding considering to what extent the climate, but also the local flora and fauna, as well as the agricultural methods, have changed over this long period of time," said lead author Martin Mascher from the Leibniz Institute.

Comparing ancient seeds with wild forms from the region and with local barley lines grown by farmers in the Near East enabled Fahima and his colleagues at the University of Haifa and Tel-Hai College to hypothesize that domestication of barley began in the Upper Jordan Valley, far to the north of the Judean Desert's Yoram Cave.

The researchers assume that conquerors and immigrants coming to the region did not bring their own crop seeds from their former homelands, but instead continued cultivating the locally adapted strains.

"This is just the beginning of a new and exciting line of research," predicted second lead author Verena Schuenemann from Tuebingen University in Germany. "DNA-analysis of archaeological remains of prehistoric plants will provide us with novel insights into the origin, domestication and spread of crop plants."

Other members of the research team were from the James Hutton Institute, UK; University of California, Santa Cruz, US; and University of Minnesota St. Paul, US.

Please visit the site: <http://www.israel21c.org/dna-of-6000-year-old-barley-reveals-its-secrets/>

RARE 3,300 YEAR-OLD SECRET PASSAGE, FIRST HITTITE SKELETON FOUND IN CENTRAL TURKEY

A 3,300-year-old secret passage and a skeleton belonging to the Hittite period have been found during archeological excavations in Alacahöyük archeological site in central Anatolian province of Çorum, Turkey. The findings were compiled in a documentary entitled "Following the footsteps of history," shedding light on the lives of ancient peoples.

The discovery of the skeleton could have significant implications for historians, as it marks the first time a Hittite-era skeleton is found and could break new ground.

The excavation work in the site is carried out for the Ministry of Culture, by Ankara University.

Regarded as Turkey's first national excavation site, Alacahöyük is an archeological site that is home to Neolithic and Hittite settlement, where earliest examples of copper and stone tools can be found. It also contains royal tombs dating to the 3rd century BCE, with precious artifacts including jewelry, weapons, metal vessels and more.

Please visit the site: <http://www.dailysabah.com/history/2016/09/07/rare-3300-year-old-secret-passage-first-hittite-skeleton-found-in-central-turkey> [Go there for pix and video]

DYING IN ANCIENT EGYPT—EVIDENCE OF INFLAMMATION, INFECTION AND POSSIBLE CANCER

As silent witnesses to the past, ancient Egyptian mummies can add to our knowledge of their society well beyond what we can learn from the study of texts, art and funerary rituals.

In a study led by Macquarie University, researchers have successfully identified proteins present in skin samples from 4200-year-old mummies with evidence of inflammation and activation of the immune system, as well as possible indications of cancer.

The researchers performed proteomics analysis on four skin samples and one muscle tissue sample taken from three ancient Egyptian mummies of the First Intermediate Period (FIP).

"We identified numerous proteins that provide evidence of activation of the innate immunity system in two of the mummies, one of which also contained proteins indicating severe tissue inflammation, possibly indicative of an infection that we can speculate may have been related to the cause of death," says Professor Paul Haynes from the Department of Chemistry and Biomolecular Sciences.

Dr Jana Jones from the Department of Ancient History describes the FIP as the first Egyptian 'Dark Age'.

"It was marked by political unrest, changed economic conditions, mega drought and famine," she says.

"Our scientific study of mummies provides a historical context for medical conditions that are found in the modern world such as cardiovascular disease and cancer.

"This proteomic analysis is particularly significant because it is not only the first instance of isolation of proteins from mummified tissue since one brief study in 1975, but because it is able to detect inflammation and the presence of tumours undetectable by other methods, such as DNA analysis."

The analysis of ancient proteins using proteomic techniques, such as the ones used in this study, does not rely on amplification as is used in DNA studies, but does present other issues.

"The issue of contamination is always present in proteomics analysis of ancient samples – materials extracted from ancient burial sites may well have been contaminated by people involved in the sample collection process, but we have no way of controlling for that," says Professor Haynes.

In this study, the researchers have conclusively identified more than 230 proteins present in a set of very small skin and muscle tissue samples taken from three Egyptian mummies of the FIP, approximately 4200 years of age. The samples were found to

contain large amounts of collagen, which is in agreement with morphological analysis by scanning electron microscopy.

"Analysis of skin tissue from the mummy known as Khepeset identified a protein signature indicative of a severe immune response, and a subset of those proteins were strongly linked to bacterial infection in the lungs. Hence, bacterial pulmonary infection, such as tuberculosis, is something you could point to as a possible cause of death," says Professor Haynes.

"Analysis of both skin and muscle samples from the mummy known as Idi identified numerous proteins associated with inflammation and immune response. In the muscle sample we also found two proteins, deleted in malignant brain tumor 1 (DMBT-1) and transglutaminase, the increased expression of which, in tandem, has previously been reported to be correlated with pancreatic cancer progression. This allows us to speculate that Idi may also have been suffering from pancreatic, or some other, cancer," he concludes.

More information: Jana Jones et al. Identification of proteins from 4200-year-old skin and muscle tissue biopsies from ancient Egyptian mummies of the first intermediate period shows evidence of acute inflammation and severe immune response, Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences (2016). DOI: 10.1098/rsta.2015.0373

Please visit the site: <http://phys.org/news/2016-09-dying-ancient-egypt-evidence-inflammation-infection.html>

8,000-YEAR-OLD FEMALE FIGURINE UNCOVERED IN CENTRAL TURKEY

Whoever she was, she had achieved celebrity status.

At Catalhoyuk, an ancient site in central Turkey, archaeologists have discovered a rare stone figurine of a woman about 8,000 years old. Only a handful of statuettes of the era have been found in one piece.

The figurine was found beneath a platform with a piece of obsidian, which suggests that it may have been placed there as part of some ritual.

Such figurines are often thought of as fertility goddesses. The archaeologists, however, suggest the object represents older women who have achieved status.

A Unesco World Heritage site, Catalhoyuk dates back nearly 9,000 years. Archaeological research has been conducted there since the 1960s.

Please visit the site: <http://www.nytimes.com/2016/09/20/science/8000-year-old-statue-turkey.htm> [Go there for nice pict]

HUMAN SKELETON FOUND ON FAMED ANTIKYTHERA SHIPWRECK TWO- THOUSAND-YEAR-OLD BONES COULD YIELD FIRST DNA FROM AN ANCIENT SHIPWRECK VICTIM, BY JO MARCHANT

Hannes Schroeder snaps on two pairs of blue latex gloves, then wipes his hands with a solution of bleach. In front of him is a large Tupperware box full of plastic bags that each contain sea water and a piece of red-stained bone. He lifts one out and inspects its contents as several archaeologists hover behind, waiting for his verdict. They're hoping he can pull off a feat never attempted before - DNA analysis on someone who has been under the sea for 2,000 years.

Through the window, sunlight sparkles on cobalt water. The researchers are on the tiny Greek island of Antikythera, a 10-minute boat ride from the wreckage of a 2,000-year-old merchant ship. Discovered by sponge divers in 1900, the wreck was the first ever investigated by archaeologists. Its most famous bounty to date has been a surprisingly sophisticated clockwork device that modelled the motions of the Sun, Moon and planets in the sky - dubbed the 'Antikythera mechanism'.

But on 31 August this year, investigators made another groundbreaking discovery: a human skeleton, buried under around half a metre of pottery sherds and sand. "We're thrilled," says Brendan Foley, an underwater archaeologist at Woods Hole Oceanographic Institution in Massachusetts, and co-director of the excavations team. "We don't know of anything else like it."

Within days of the find, Foley invited Schroeder, an expert in ancient-DNA analysis from the Natural History Museum of Denmark in Copenhagen, to assess whether genetic material might be extracted from the bones. On his way to Antikythera, Schroeder was doubtful. But as he removes the bones from their bags he is pleasantly surprised. The material is a little chalky, but overall looks well preserved. "It doesn't look like bone that's 2,000 years old," he says. Then, sifting through several large pieces of skull, he finds both petrous bones - dense nuggets behind the ear that preserve DNA better than other parts of the skeleton or the teeth. "It's amazing you guys found that," Schroeder says. "If there's any DNA, then from what we know, it'll be there."

Schroeder agrees to go ahead with DNA extraction when permission is granted by the Greek authorities. It would take about a week to find out whether the sample contains any DNA, he says: then perhaps a couple of months to sequence it and analyse the results.

For Schroeder, the discovery gives him the chance to push the boundaries of ancient-DNA studies. So far, most have been conducted on samples from cold climates such as northern Europe. "I've been trying to push the application of ancient DNA into environments where people don't usually look for DNA," he says. (He was part of a team

that last year published the first Mediterranean ancient genome, of a Neolithic individual from Spain².)

Foley and the archaeologists, meanwhile, are elated by the chance to learn more about the people on board the first-century bc ship, which carried luxury items from the eastern Mediterranean, probably intended for wealthy buyers in Rome.

Rare discovery

The skeleton discovery is a rare find, agrees Mark Dunkley, an underwater archaeologist from the London-based heritage organization Historic England. Unless covered by sediment or otherwise protected, the bodies of shipwreck victims are usually swept away and decay, or are eaten by fish. Complete skeletons have been recovered from younger ships, such as the sixteenth-century English warship the Mary Rose and the seventeenth-century Vasa in Sweden. Both sank in mud, close to port. But "the farther you go back, the rarer it is", says Dunkley.

Only a handful of examples of human remains have been found on ancient wrecks, says archaeologist Dimitris Kourkoumelis of the Greek Ephorate of Underwater Antiquities, who collaborates with Foley. They include a skull found inside a Roman soldier's helmet near Sardinia, and a skeleton reportedly discovered inside a sunken sarcophagus near the Greek island of Syrna (although the bones disappeared before the find could be confirmed).

In fact, the best-documented example is the Antikythera wreck itself: scattered bones were found by the French marine explorer Jacques Cousteau, who excavated here in 1976. Argyro Nafplioti, an osteoarchaeologist at the University of Cambridge, UK, concluded that the remains came from at least four individuals, including a young man, a woman and a teenager of unknown sex³.

At the wreck site, only broken pots now remain on the sea floor - the sponge divers recovered all artefacts visible on the seabed in 1900-01. But Foley thinks that much of the ship's cargo may be buried under the sediment. His team, including expert technical divers and members of the Greek archaeological service, relocated and mapped the 50-metre-deep site before beginning their own excavations in 2014. They have found items such as wine jars, glassware, two bronze spears from statues, gold jewellery and table jugs used by the crew (see 'Ancient bounty'). The divers have also recovered ship components including enormous anchors and a teardrop-shaped lead weight, found in June, that may be the first known example of what ancient texts describe as a 'war dolphin' - a defensive weapon carried by merchant vessels to smash hostile ships.

Please visit the site: <http://www.nature.com/news/human-skeleton-found-on-famed-antikythera-shipwreck-1.20632>

BEDOUIN YOUTHS HELP UNCOVER 1,500- YEAR-OLD BUILDINGS IN NEGEV, BY YORI YALON

Cooking and baking facilities, as well as numerous pottery vessels, unearthed in ruins of ancient farming community * Artifacts indicate family that lived on the farm had a thriving business * Area was populous during Byzantine, early Islamic periods.

The remains of farm structures dating back 1,500 years were recently unearthed by a group of youths from the Bedouin community of Arara in the Negev Desert. The teens were working with the Israel Antiquities Authority on a pre-construction project to survey the premises where a new housing development for Bedouin residents of the desert is slated to go up.

The exploratory excavation uncovered the remains of farm structures from the Byzantine and early Islamic eras, which indicate that this part of the Negev was home to a large population in those periods. The structures include a row of rooms that face an interior courtyard and apparently belonged to a few local clans.

The foundations of the Byzantine-era buildings were constructed out of hewn stone, while the walls were built from mud brick. Later, after the Muslim conquest, new structures were erected on top of the Byzantine buildings which made use of architectural features from the older buildings. This was a common practice at that time.

"The youngsters who worked with us on the dig during their [summer] vacation earned money, and also gained valuable life experience and a glimpse into their past, the history of the place where they live," said Vladik Lifshitz, who is directing the excavation for the Israel Antiquities Authority.

"The fact that some of the rooms we discovered had been plastered, and many baking and cooking facilities were discovered, along with pottery vessels that were used for food storage and for cooking, shows that the family that lived here was well off and had a thriving farm," Lifshitz said.

[URLs and captions for the pictures accompanying the article.]

http://media.israelhayom.co.il/2016/09/18/147418879263121643a_b.jpg

Vladik Lifshitz (center, with hat) of the Israel Antiquities Authority with the Bedouin teens who worked on the dig Photo credit: Israel Antiquities Authority

http://media.israelhayom.co.il/2016/09/18/147418879489005432a_b.jpg

Some of the findings from the excavation | Photo credit: Israel Antiquities Authority

Please visit the site:

http://www.israelhayom.com/site/newsletter_article.php?id=36513

POLICE SEARCHING STOLEN VEHICLE FINDS 2ND CENTURY TOMB IN BURSA

Police teams looking to find a stolen truck in Bursa's Iznik district have discovered a sarcophagus at an olive grove, belonging to the Late Antiquity period.

According to reports, the incident took place when police saw an abandoned excavation at an olive grove in Hisardere district, five kilometers away from Iznik town center.

Police searching stolen vehicle finds 2nd century tomb in Bursa

They informed the gendarmerie, who contacted Iznik Museum to inspect the site.

Archeologists from the museum arrived and carefully started digging to reveal the sarcophagus, which is reportedly from the second century AD and is made out of marble.

It reportedly has two antefixes on both sides, each of which have five lion's heads and weigh six tons.

Iznik Museum officials said that they will display the sarcophagus once it is completely removed from the ground.

Another sarcophagus belonging to a queen was found near the area 10 months ago. It was also thought to be from the Late Antiquity period and weighed seven tons. When it was discovered, officials discovered that treasure hunters had found and raided it.

Please visit the site: <http://www.dailysabah.com/history/2016/09/10/police-searching-stolen-vehicle-finds-2nd-century-tomb-in-bursa>

MYSTERIOUS 6,000-YEAR-OLD FORTRESSES FOUND IN JORDAN SHOW SURPRISINGLY ADVANCED EARLY SOCIETY, BY PHILIPPE BOHSTROM

Settlements with double-fortified walls and irrigated terraces were unexpected deep in the Early Bronze Age desert.

Excavations in the volcanic desert of Jordan have uncovered three surprisingly advanced fortified settlements with artificially irrigated terraced gardens, dating to 6,000 years ago.

The remains of the fortified settlements were discovered atop hills at the edge of North-eastern Jordan's scorched volcanic desert, close to the Syrian border. Radiocarbon dates date its era between 4000 and 3500 B.C.E., about 1000 years before the pyramids.

The discovery came as a surprise, since nothing like this old has been found in the inhospitable depths of the Jordan desert, a place that had been considered uninhabitable by primitive society.

Jawa, a fortified site from the 4th millennium B.C.E discovered earlier at the western edge of the region, had been considered to be the most eastern located settlement of the early Bronze Age in the region, Dr. Bernd Müller-Neuhof, head of the excavation project, told Haaretz. Now three others found deeper in the desert, and possibly older, are under study.

The discovery of developed three hilltop settlements with fortification walls and stone houses in the rocky, barren area of Khirbet abu al-Husayn, Khirbet al-Ja'bariya and Tulul al-Ghusayn and evidence of well-watered gardens, indicates that a highly developed society had settled in the eastern basalt desert of Jordan around the late 5th to 4th millennium B.C.E. But who they were, and where they came from, remains a mystery.

These fortified settlements may be the earliest of their kind in the Levant or even all of Southwest Asia, the archaeologist heading the study suggests.

The inhabitants of these settlements were not the first people using this region, Müller-Neuhof adds. There is evidence of temporary hunter-herder camps during the Neolithic era. Nonetheless, this is the first evidence of year-round occupation of at least some of the sites, which were first discovered during surveys in the area of north-eastern Jordan by the Orient Department of the German Archaeological Institute between 2010 and 2015.

Six years of subsequent research revealed much previously unexpected evidence of elaborate socioeconomic activity in the region, including extensive flint mining and advanced agricultural techniques.

Protecting the scarce resource: Water

Since the area had no regular source of water, the inhabitants engineered a sophisticated system of diverting locally occurring precipitation into terraced gardens, where they saturated sediments for agricultural purposes. Water for consumption was most probably obtained by digging wells in wadi beds and by using lava caves as natural cisterns.

One settlement with fortification walls and simple dwelling structures, discovered at the foot of a volcanic hill and on the hill itself, featured terraced gardens that were watered using sophisticated irrigation systems fed by rainwater run-off. The evidence indicates that the terraces were used to farm grain. Grinding stones for grain were also discovered in the settlements, in association with the houses.

Older than the well-known field irrigation systems in Mesopotamia, these terraces may be the earliest example of irrigation farming using artificially harvested rainwater.

A 2011 survey identified similar terraced gardens at Jawa as well, Müller-Neuhof says.

The archaeologists also found evidence of flint mining and flint tool mass production east of the basalt desert, which might have been related to the settlement activities on the volcanoes.

Why the inhabitants decided to settle in this arid desert region remains a puzzle. Who they might have been is also unknown. The mysterious inhabitants left few traces.

At Jawa, signs of conflict in the walls have been discovered, areas where walls had been battered down and rebuilt. Some think water-hungry nomads of the deserts may have clashed with the immigrants that build the cities over control of the water.

Writing hadn't been invented yet and there is no clue as to the inhabitants' name. Theoretically, their origin might be elucidated by finding similarities, if any, with flint tool assemblages, pottery or other clues in well-known sedentary cultures in the southern Levant and Mesopotamia, Müller-Neuhof explains. However, no clear clues have surfaced yet.

Alternatively, the inhabitants may have been indigenous, deriving from the people who lived in the region during the Late Neolithic.

The discoveries advance our understanding of the earliest cultural development in Mesopotamia and the southern Levant, the birthplace of modern civilization. The 4th millennium B.C.E. was a crucial period in the history of old world civilization, as cultural evolutionary processes began that would enable the development of complex cultures. Among these processes were the beginning of urbanization, the invention of artificial irrigation, mass production of commodities, long-distance trade, and the invention of the precursors of writing and economic administration. The new discoveries move a region hitherto unknown and regarded as peripheral into the focus of research on this crucial period.

Please visit the site: <http://www.haaretz.com/jewish/archaeology/1.742318> [Go there for pix]

THIS IS THE OLDEST MELODY IN EXISTENCE - AND IT'S UTTERLY ENCHANTING, BY ELIZABETH DAVIS

The Hurrian Hymn was discovered in the 1950s on a clay tablet inscribed with Cuneiform text. It's the oldest surviving melody and is over 3400 years old.

The hymn was discovered on a clay tablet in Ugarit, now part of modern-day Syria, and is dedicated to the Hurrians' goddess of the orchards Nikkal.

The clay tablet text, which was discovered alongside around 30 other tablet fragments, specifies 9 lyre strings and the intervals between those strings - kind of like an ancient guitar tab.

But this is the only hymn that could be reconstructed - although the name of the composer is now lost.

The system of music notation we use now wasn't invented until 1000 AD. This is something altogether different.

The notation here is essentially a set of instructions for intervals and tuning based around a heptatonic diatonic scale. There's much more detail about the precise language and instructions here .

The lyrics are very difficult to translate, but one academic has come up with this rendering of them:

'Once I have endeared the deity, she will love me in her heart, the offer I bring may wholly cover my sin, bringing sesame oil may work on my behalf in awe may I'

Please visit the site: <http://www.classicfm.com/music-news/videos/oldest-song-melody/#qygOeJT5UgfHO1DE.97> [Go there for audio, linx, and pix]

ANCIENT SEAL FOUND IN TATARLI MOUND

Excavations at Tatarlı Mound in the southern province of Adana's Ceyhan district have unearthed an impression seal from a monumental Hittite-era structure. The seal contains information from about 3,000 years ago. The female name "Pati" was also found on the seal.

Tatarlı Mound excavations deputy head Serdar Girginer said the seal might have been from the period of famous Queen Puduhepa, and continued:

"Both archaeological and interdisciplinary research at Tatarlı Mound always provides data giving holy messages. These findings like impression seals reveal that it was a very important city. In 2008 we found another seal reading the name of a Hittite person... now this seal has a name, too. This person is from the time of Puduhepa in a later period."

Çukurova University academic Meltem Doğan Alparslan said a similar seal was found in Ras Shamra in Syria.

She said that other examples of the seal were also unearthed in the Hattusha excavations, adding, "This seal makes us think that a woman named Pati was an important person in the region."

URL for the picture accompanying the article:
http://www.hurriyetdailynews.com/images/news/201609/n_103834_1.jpg

Please visit the site:
<http://www.hurriyetdailynews.com/.aspx?pageID=238&nID=103834&NewsCatID=375>

INFANTICIDE OR NATURAL DEATH? NEW METHOD MAY ANSWER THIS ANCIENT QUESTION, BY KRISTINA KILLGROVE

The study of ancient baby bones and infanticide just got a powerful new analysis tool. British researchers have found that micro-CT analysis can reveal whether the internal structure of bones was compromised by bacteria - those infants with intact bones are most likely pre-term, stillborn, or short-lived. This new method reopens the discussion of infanticide in ancient Roman society and is applicable in modern forensic contexts as well.

In a new article in the *Journal of Archaeological Science* this week, Thomas Booth of London's Natural History Museum and colleagues lay out their novel method and report results from Roman-era British infant skeletons. The researchers examined a phenomenon called microbial bioerosion, which is when, after the death of an organism, microbes like bacteria destroy the internal structure of bones at the microscopic level. While it was previously assumed that this destruction was the result of bacteria in the soil in which a person was buried, more recent studies have shown that the person's own gut bacteria are also involved. The fact that gut bacteria are important to decomposition is the key to this study, as the human gut microbiome does not begin to develop until after birth.

In a previous study, Booth had looked at over 300 people from archaeological sites around Europe and found that bacterial bioerosion was present in roughly 50% of the infants who died around birth, but in 94% of people older than that. Because the infant gut is sterile prior to birth, Booth suggests that the half of infants without evidence of bioerosion were likely pre-term or stillborn.

For the present study, Booth and colleagues examined leg bones from ten Roman-era infant skeletons from sites around London. They chose skeletons of babies whose bone and tooth development suggested they died around the time of birth, and they selected skeletons from different burial environments. After micro-CT scanning the bones, Booth and colleagues discovered that half of the samples were free from bacterial bioerosion. More specifically, 75% of the samples from preterm infants, or those that were less than 38-40 weeks' gestation, had no evidence of bioerosion in the bones. There was no association between amount of bioerosion and archaeological site or burial method; only between bioerosion and age-at-death of the infants.

This analysis of Booth and colleagues is therefore important in answering questions about infanticide in ancient times, since it provides a new method of figuring out whether an infant died before birth or after.

The question of infanticide in the ancient world is a longstanding one. Older archaeological excavations in which baby bones were found were often given the label of infanticide, especially prior to the development of bioarchaeology as a true research field. In more recent years, experts in ancient bones have gotten involved and complicated the picture.

In classical Athens, for example, hundreds of baby and dog skeletons found in an abandoned well by archaeologists in 1938 puzzled osteologists for years. But new analyses suggest the vast majority of them died of natural causes - bacterial meningitis or diarrhea, for example, both of which frequently killed infants prior to the invention of modern medicine.

There's also the case of special cemeteries in ancient Carthage. Hundreds of remains of infants and babies have been found at these cemeteries - called tophets - over the years, and the debate about cause-of-death has been raging for just about as long. Archaeologists and bioarchaeologists have been debating in the pages of *Antiquity* and *PLOS One* whether the skeletal evidence suggests sacrifice/infanticide or natural deaths. Given the fact that researchers are examining the same remains and coming to different conclusions, it's unlikely this question will be settled any time soon.

In England, there's also the question of the so-called "brothel babies" from Yewden Villa in Buckinghamshire, dating to the mid-2nd century AD. Because the almost 100 skeletons were from perinates - or infants around the time of birth - researchers suggested in 2010 that they might represent unwanted babies of women who worked in a brothel. But further DNA analysis in 2014 revealed that there were equal numbers of male and female babies, and that none of them were related, which calls into question the brothel theory.

All of these examples show that quite a bit of stock is put in the age-at-death of the babies. That is, a claim of infanticide relies on whether or not the babies had been born or whether they were pre-term (miscarriages) or stillborn. The new method that Booth created and that Booth and colleagues tested on Roman-era British skeletons may prove highly useful in understanding further the infant deaths at ancient Athens, Carthage, and Buckinghamshire.

As Booth and colleagues sum up in their article, "this technique also has potentially important applications to forensic and archaeological cases of putative infanticide, providing important additional evidence alongside estimates of gestational age-at-death and dental histology." In short, use of this new technique may finally help bioarchaeologists solve questions of ancient infanticide by revealing more precisely whether a perinatal skeleton is that of a preterm fetus or an infant that died shortly after death.

Kristina Killgrove is a bioarchaeologist at the University of West Florida. For more osteology news, follow her on Twitter (@DrKillgrove) or like her Facebook page Powered by Osteons.

Please visit the site:

<http://www.forbes.com/sites/kristinakilgrove/2016/09/08/infanticide-or-natural-death-new-method-may-answer-this-ancient-question/#6b76123972e3>

NEW ETRUSCAN TOMB FOUND IN VULCI NECROPOLIS SUPERINTENDENT RUSSO CALLS IT AN EXCEPTIONAL DISCOVERY

Archaeologists working in the Etruscan necropolis of Vulci (near Viterbo) have discovered a tomb with the remains of a woman who was possibly a relative of a princess buried nearby.

The excavation was led by the Archaeological Superintendency for the Metropolitan Area of Rome, the Province of Viterbo and Southern Etruria; in cooperation with the Vulci Foundation and the contribution of the City of Montalto di Castro.

The tomb was found in the area known as Poggetto Mengarelli, where in recent months a nearby illegal excavation by looters led archaeologists to uncover the now-famous Tomb of the Golden Scarab, that of an Etruscan princess buried around 700 B.C., outfitted with jewelry made of bronze, silver, gold and amber.

The excavations of the new tomb were concentrated north of the Tomb of the Golden Scarab, uncovering 25 burial sites, some still intact, mainly from the Etruscan period of the 8th century B.C. and that of the Roman Republic.

Under the white limestone closure archaeologists found a funerary urn intact with ashes of the woman buried in the tomb, together with a fuseruola (a disk with a hole in the middle) - a clear sign of activity linked to spinning cloth - as well as a set of 12 vases, one with a painted geometric decorative motif of the "red on white" type, and five bronze crescent-shaped fibulae (brooches or clasps), perhaps once attached to a garment that was placed over the urn.

"We're on the tracks of the first Etruscans who buried their dead in this area," said Carlo Casi, scientific director of the Vulci Foundation.

"We find ourselves before an exceptional discovery," said Superintendent Alfonsina Russo.

"These initial highly interesting discoveries will allow us to finally understand the topographic and structural development of the northern necropoli of the Vulci, and finally unravel the numerous doubts that accompany the funerary contexts of this period, which are often decontextualised and isolated," she said.

Please visit the site:

http://www.ansamed.info/ansamed/en/news/sections/culture/2016/09/08/new-etruscan-tomb-found-in-vulci-necropolis_08e6f071-7c7e-4a69-9e20-d1a04e044e8f.html [Go there for pix]

2,100-YEAR-OLD STATUE OF CYBELE THE ANATOLIAN MOTHER GODDESS UNEARTHED IN NORTHWESTERN TURKEY

An estimated 2,100-year-old rare marble statue of Cybele, the mother goddess of Anatolia, has been unearthed in excavations in northwestern Ordu province located on the Black Sea coast.

The historic sculpture of Cybele sitting on her throne weighed a whopping 200 kilograms and was about 110 centimeters tall.

The statue is also the first marble statue found in Turkey in its original place.

The ancient artifact was unearthed in excavations launched by a team of 25 archeologists led by the head of the Department of Archeology in Gazi University, Prof. Dr. Süleyman Yücel Şenyurt, in the 2,300-year-old Kurul Kalesi, or the Council Fortress.

"We are continuing our work non-stop. Two days ago we found an extraordinary artifact. According to our research, the statue remained intact after the walls of the entrance of the fortress of Kurul collapsed during an invasion by Roman soldiers. This statue has also shown us that the fortress of Kurul in Ordu was a very important settlement [in ancient times]," Prof. Şenyurt said.

Saying that it was an incredibly rare find, the professor said that they were proud to unearth such an artifact in Turkey. He also said that the priceless statue would be later on transferred to the archeology museum in Ordu.

The professor also said that the first attempts to conduct excavations in the area were made about 6 years ago, but had been postponed for various reasons.

Meanwhile, Mayor Enver Yılmaz also pledged to provide TL 500,000 in funds to all excavations in the fortress of Kurul. He also said that the fortress will be turned into an open air museum in the near future and hopes the excavations will contribute to tourism in the region as well as in Turkey.

The excavations in the fortress are also the first archaeological diggings on the eastern coast of the Black Sea.

Cybele, an Anatolian mother goddess, is the symbol of prosperity with her pregnant belly, seated on her throne.

In Anatolian mythology she was the personification of the earth. In Greek mythology in which she was equated to Earth-goddess Gaia, Cybele was mostly associated with fertile nature, mountains, town and city walls, as well as wild animals such as lions.

Please visit the site: <http://www.dailysabah.com/history/2016/09/09/2100-year-old-statue-of-cybele-the-anatolian-mother-goddess-unearthed-in-northwestern-turkey>
[Go there for pix]

VETERAN ARCHAEOLOGIST EXPLORES JORDAN'S ANCIENT SUGAR INDUSTRY, BY SAEB RAWASHDEH

Greek archaeologist Konstantinos Politis is a familiar face among many local and foreign researchers in the Kingdom; he has been excavating in Jordan for more than 30 years.

"I'm very happy, honoured and privileged to have worked in one of the most interesting areas of the world for so long," the scholar told The Jordan Times in a recent interview.

Politis, chairman of the Hellenic Society for Near Eastern Studies, has recently focused on sugar production at TawahinSukkar in Ghor Al Safi, modern-day Karak, on the southeastern end of the Dead Sea.

There is clear evidence of massive sugar production across the whole Jordan Valley, for export to Europe during the Middle Ages, according to Politis.

"Sugar canes originated from South East Asia, particularly India," the scholar explained, adding that Alexander the Great's generals in India were the first Westerners to come across sugar, calling it "honey from reeds".

In early Islamic times, Zughar was a very important commercial town due to its agriculture and industrial sugar production.

Based in Damascus, the caliph collected money and sugar from the Jordan Valley, "which was one big factory".

"The agricultural system that was introduced to the area during the Greco-Roman period continued to thrive during early Byzantine and early Islamic times, when new techniques were introduced from Persia and India.

"This persevered until the 15th century and saw a total collapse during Ottoman rule," said Politis.

The archaeologist is continuing his work on the ancient sugar industry, supported by USAID's Sustainable Cultural Heritage through Engagement of Local Communities Project.

"We are going to upgrade the presentation of the sugarcane industry in Ghor Al Safi at the Museum at the Lowest Place on Earth," Politis said.

The plan is to build a prototype of the original sugar mill from the mediaeval era, with rooms for boiling and crystallisation, he added.

The Dead Sea Valley was a populated and developed area in ancient times, with settlements dating back over 12,000 years, according to the archaeologist.

Due to Wadi Al Hasa's water supply and fertile plains, agriculture was well-developed and could feed a large population, he explained.

At various times in history, the Dead Sea area came under the political influence of Egyptian kingdoms, which expanded east by military conquests, leaving behind material evidence like pottery.

The territory of the Jordan Valley was ruled by local vassal kingdoms that were either affiliated with Egyptian or Mesopotamian political centres, he elaborated.

"There are hundreds of thousands of graves in the area," Politis stressed, "dating back to the Early Bronze Age (about 3,000 BC)".

On the southern edge of Wadi Al Hasa, "there are walls with potential archaeological settlements of that period", he noted.

However, there is no evidence from the Late Bronze Age in Ghor Safi, unlike sites in the Jordan River Valley, such as Pella and Amman, which had the direct trade route and links with Haifa and other Mediterranean ports, Politis said.

Please visit the site: <http://jordantimes.com/news/local/veteran-archaeologist-explores-jordan%E2%80%99s-ancient-sugar-industry>

SCANNING SOFTWARE DECIPHERS **ANCIENT BIBLICAL SCROLL,** **BY DANIEL ESTRIN**

The charred lump of a 2,000-year-old scroll sat in an Israeli archaeologist's storeroom for decades, too brittle to open. Now, new imaging technology has revealed what was written inside: the earliest evidence of a biblical text in its standardized form.

The passages from the Book of Leviticus, scholars say, offer the first physical evidence of what has long been believed: that the version of the Hebrew Bible used today goes back 2,000 years.

The discovery, announced in a Science Advances journal article by researchers in Kentucky and Jerusalem on Wednesday, was made using "virtual unwrapping," a 3D digital analysis of an X-ray scan. Researchers say it is the first time they have been able to read the text of an ancient scroll without having to physically open it.

"You can't imagine the joy in the lab," said Pnina Shor of the Israel Antiquities Authority, who participated in the study.

The digital technology, funded by Google and the U.S. National Science Foundation, is slated to be released to the public as open source software by the end of next year.

Researchers hope to use the technology to peek inside other ancient documents too fragile to unwrap, like some of the Dead Sea Scrolls and papyrus scrolls carbonized in the Mt. Vesuvius volcano eruption in 79 CE. Researchers believe the technology could also be applied to the fields of forensics, intelligence, and antiquities conservation.

The biblical scroll examined in the study was first discovered by archaeologists in 1970 at Ein Gedi, the site of an ancient Jewish community near the Dead Sea. Inside the ancient synagogue's ark, archaeologists found lumps of scroll fragments.

The synagogue was destroyed in an ancient fire, charring the scrolls. The dry climate of the area kept them preserved, but when archaeologists touched them, the scrolls would begin to disintegrate. So the charred logs were shelved for nearly half a century, with no one knowing what was written inside.

Last year, Yosef Porath, the archaeologist who excavated at Ein Gedi in 1970, walked into the Israel Antiquities Authority's Dead Sea Scrolls preservation lab in Jerusalem with boxes of the charcoal chunks. The lab has been creating hi-resolution images of the Dead Sea Scrolls, the earliest copies of biblical texts ever discovered, and he asked researchers to scan the burned scrolls.

"I looked at him and said, 'you must be joking,'" said Shor, who heads the lab.

She agreed, and a number of burned scrolls were scanned using X-ray-based micro-computed tomography, a 3D version of the CT scans hospitals use to create images of

internal body parts. The images were then sent to William Brent Seales, a researcher in the computer science department of the University of Kentucky. Only one of the scrolls could be deciphered.

Using the "virtual unwrapping" technology, he and his team painstakingly captured the three-dimensional shape of the scroll's layers, using a digital triangulated surface mesh to make a virtual rendering of the parts they suspected contained text. They then searched for pixels that could signify ink made with a dense material like iron or lead. The researchers then used computer modeling to virtually flatten the scroll, to be able to read a few columns of text inside.

"Not only were you seeing writing, but it was readable," said Seales. "At that point we were absolutely jubilant."

The researchers say it is the first time a biblical scroll has been discovered in an ancient synagogue's holy ark, where it would have been stored for prayers, and not in desert caves like the Dead Sea Scrolls.

The discovery holds great significance for scholars' understanding of the development of the Hebrew Bible, researchers say.

In ancient times, many versions of the Hebrew Bible circulated. The Dead Sea Scrolls, dating to as early as the 3rd century B.C., featured versions of the text that are radically different than today's Hebrew Bible.

Scholars have believed the Hebrew Bible in its standard form first came about some 2,000 years ago, but never had physical proof, until now, according to the study. Previously the oldest known fragments of the modern biblical text dated back to the 8th century.

The text discovered in the charred Ein Gedi scroll is "100 percent identical" to the version of the Book of Leviticus that has been in use for centuries, said Dead Sea Scroll scholar Emmanuel Tov from the Hebrew University of Jerusalem, who participated in the study.

"This is quite amazing for us," he said. "In 2,000 years, this text has not changed."

Noam Mizrahi, a Dead Sea Scrolls expert at Tel Aviv University who did not participate in the study, called it a "very, very nice find." He said the imaging technology holds great potential for more readings of unopened Dead Sea Scrolls.

"It's not only what was found, but the promise of what else it can uncover, which is what will turn this into an exciting discovery," Mizrahi said.

Please visit the site:

<http://bigstory.ap.org/article/60785bb2031a478cb71ce9278782c320/> [See also
<http://www.nytimes.com/2016/09/22/science/ancient-sea-scrolls-bible.html>]

MONUMENTAL FORGOTTEN GARDENS OF PETRA REDISCOVERED AFTER 2,000 YEARS - COOL FOUNTAINS AND A HUGE POOL IN MID-DESERT ENABLED BY STRIKINGLY ADVANCED STONE-CARVED IRRIGATION AND WATER STORAGE SYSTEM, BY PHILIPPE BOHSTROM

6,000-year-old fortresses found in Jordan show surprisingly advanced early society

Recent excavations at Petra have revealed a startlingly advanced irrigation system and water storage system that enabled the desert city's people to survive – and to maintain a magnificent garden featuring fountains, ponds and a huge swimming pool. The engineering feats and other luxuries attest to the ancient Nabatean capital's former splendor and wealth some 2,000 years ago.

Petra is perhaps best known for its sandstone canyon that leads directly to Al Khazneh, The Treasury, seen in the climax to "Indiana Jones and the Last Crusade" where the hero archaeologists, played by Harrison Ford and Sean Connery, ride out of the canyon and into the Treasury in their quest for the Holy Grail.

However, 2,000 years ago, Petra was renowned for completely different reasons. It was one of the most famous water stops in the Middle East, where camel caravan routes linked distant cities. Now archaeologists are discovering the Nabataean capital, situated in the southwestern deserts of Jordan, once was adorned with an exquisite, artificially irrigated garden. It featured paths likely shaded by vines, trees and date palms, and grasses, which were cultivated next to a huge, 44-meter wide swimming pool.

The Nabataeans' ability to tame nature, and conspicuous consumption of a precious resource, water, was pure propaganda. It was a means to display wealth and power, which they could do thanks to the ingenious hydraulic system they invented, which allowed the people not only to reserve enough water for their own needs, but to water the lavish garden with fountains and an open-air pool. It had previously been unthinkable that water, a scarce resource in the desert wastes, would have been used for anything but necessity.

"The pool marks the terminus for an aqueduct that transported water from one of the springs, 'Ein Brak, located in the hills outside of Petra," Leigh-Ann Bedal, associate professor of anthropology from the Penn State Behrend College, told Haaretz. "The pool's monumental architecture and verdant garden served as a visual celebration of the Nabataeans' success at providing water to the city center."

Ongoing excavations in Petra have uncovered a shaft that appears to have led water more than 10 meters downward, from the aqueduct system to the pool level. The archaeologists have also found underground channels that helped control runoff during the rainy season, revealing the true complexity of the system for the first time.

The intricate system of channels, ceramic pipelines, underground cisterns and water tanks, which also filtered the water, allowed the people of Petra to cultivate crops, harvest fruit, produce wine and olive oil as well as build a lavish garden with a monumental open air pool in the middle of the desert.

Many cities of the ancient world straddled rivers, whose abundant water nourished and protected them. But Petra, situated on the northwest border of the Arabian Desert, rose to prominence because of the lack of water.

Petra stood at the crossroads of two important trade routes. One linked the Red Sea with Damascus. The other linked the Persian Gulf with Gaza, on the shores of the Mediterranean. Caravans from the Gulf, loaded with precious cargoes of spices, had to cross the vast wastes of the Arabian Desert, trekking for weeks before finally arriving at the narrow canyon that was the welcoming entrance to Petra. Petra meant food and lodging and, above all, cool, refreshing water.

Naturally, the citizens of Petra did not provide these comforts free of charge. The Roman historian Pliny reports that – beside the payments for fodder and lodging - gifts had to be given to the guards, the gatekeepers, the priests, and the king's servants (Natural History, Book XII). But the exorbitant prices that spices and perfumes could fetch in the prosperous cities of Europe kept the caravans coming, filling up the treasuries of Petra.

The Paradise of Petra

The gardens were practically a miracle. Petra only gets 10 to 15 centimeters of rain a year (now in the era of climate change, it may get even less). That's just 4 to 6 inches. Without developing techniques to channel, purify and even pressurize and store water, Petra could not have existed.

As was done in Jerusalem too, for instance, the people of Petra carved out channels, reservoirs, and cisterns from the solid rock, even "tanks" that purified water.

Practically every drop of rain that fell around Petra was collected and conserved, and springs were channeled to pipes that emptied into literally hundreds of cisterns carved underground, ensuring a reliable supply of drinking and bathing water in the heart of the desert, regardless of the season.

Describing Petra in the late-first century BCE, the Greek historian, Strabo wrote that there were "abundant springs of water both for domestic purposes and for watering gardens" (Geog. XVI.4.2 1)

Botanical studies show that the garden was highly ornate, adorned with palm trees and grass species. The archaeologists also found charred seeds and nut shells, but what that means remains to be seen.

Hasmonean tastes for luxury

The monumental swimming pool, a monster even wider than today's standard Olympic pools, was built around the 1st century BCE.

Pools began to become trendy in the region in the previous century, the 2nd century BCE. The Hasmonean rulers of Judah built pools surrounded by gardens at their palaces. The Hasmonean palace in Jericho, an equally arid place, had no less than seven.

Herod the Great, the Roman vassal king of Judah, continued the tradition, building a monumental swimming pool with a sunken garden in his third winter palace at Jericho. The Herodian design, with an island pavilion, decorative tiles, molding and a large garden terrace, is almost identical to the garden pool at Petra.

The citizens of Petra now only knew how to work with water, they were also masters at masonry. The very name Petra, which means “Mass of Rock,” summons up visions of stone. And Petra was indeed a city of stone, unlike any other in the Roman world. The Nabataeans painstakingly carved their houses, tombs, and temples out of the solid rock. The red sandstone mountains in which Petra was nestled were perfectly suited for this, and by the first century C.E., a monumental city had arisen in the middle of the desert.

Perhaps the most visually stunning testimony of the Nabatean mastery over stone is the Treasury, an imposing structure carved out of a massive cliff. The structure was named after the huge stone urn that crowns the building and that supposedly stored gold and precious stones. The urn is actually made out of solid stone.

However, whatever Steven Spielberg imagined, the structure does not lead into a deep labyrinth that hides the Holy Grail. Instead the Treasury holds a relatively small hall once used as a royal tomb.

The city also features tombs carved into the cliff face, tombs so tall they dwarf anyone daring to venture into their dark interiors.

Petra survived for centuries, but once Rome formally took possession of the city in 106 C.E., its importance in international trade began to wane. A colonnade and theater testify to the Roman presence in the city during the first and second centuries. But in time, the Romans developed sea-lanes to the East, the overland spice trade collapsed and Petra was gradually abandoned to the desert sands. It would finally succumb at the end of the Byzantine Empire's rule, around 700 C.E.

Please visit the site: <http://www.haaretz.com/jewish/archaeology/1.744119> [Go there for many pix]

CAN AN ARTEFACT HELP US UNDERSTAND THE ANCIENTS? BY JUSTIN THOMAS

A remarkable archaeological find in central Turkey has reignited speculation about our Stone Age past. The find in question is an 8,000-year-old marble figurine, approximately 18cm long, depicting a naked and rather corpulent woman. The figurine had been intentionally and carefully buried under the floor of a Neolithic house, giving rise to the questions: who was she, and what would motivate people to bury such a skilfully crafted artefact under the floor of their home?

Psychologists typically grapple with the behaviour, thought processes and motivations of the living. This is a difficult enough task in itself, especially when you factor in cultural differences.

Imagine, then, trying to untangle and explain the behaviour and intentions of our very distant, long-dead ancestors. This is where psychology meets archaeology, giving rise to a relatively new discipline known as cognitive archaeology.

In attempting to answer questions about how people used to think, context is critical.

Çatalhöyük, the location of the current remarkable find, is often hailed as the oldest city on Earth. Situated on the outskirts of the modern-day Konya, this once densely populated human habitation is about 9,000 years old. The site was continually inhabited for more than a millennium, with the population hovering around 5,000.

The recent find is the latest in a series of similar figurines unearthed at the site going back to the 1960s. The earlier finds of corpulent female figurines gave rise to the speculation that Çatalhöyük was a matriarchal society. One of the most famous artefacts from the site is the iconic figurine of an enthroned woman with her hands resting on the heads of two leopards.

It is on display at Museum of Anatolian Civilisations in Ankara. Several leading archaeologists have interpreted such finds as evidence of a "Mother Goddess" cult at Çatalhöyük.

Each year, coachloads of visitors descend on the site from all over the world. Many of these visitors are women from the "Goddess community", a kind of vanguard of second-wave feminism. For these intrepid pilgrims, some from as far away as California, the corpulent females and the leopards depicted in the figurines represent female power, sovereignty and divinity: symbols of a long-lost gynocratic golden age.

Professor Ian Hodder, the director of research at Çatalhöyük, expresses scepticism about the idea of a mother goddess cult. He does, however, concede that the motivation for the settlement in the first place may well have been based on joint ritual and symbolic activities; what we might call religion.

This most recent figurine discovered at Çatalhöyük is intact and highly detailed. Most of the earlier finds were broken and not nearly so well preserved. The placement of the

figurine under the floor of the home is in keeping with how the people of Çatalhöyük are known to have buried their dead.

The location of the find and its naturalistic detail suggest that this figurine depicts a specific person, an elderly woman known to the household. This might not fit with the idea of a mother goddess cult, but it certainly supports the notion of a Neolithic society in which female elders were held in particularly high esteem, depicted in art and honoured in death.

We can never know with absolute certainty what living people are thinking, so our speculation about this long-vanished society remains wide open to interpretation and reinterpretation. The cognitive archaeologist might never have a complete understanding of why we did what we did or how we used to think, but these are still great questions to ask.

These are the seemingly important questions that come automatically to mind, the type of questions we can't help asking ourselves.

Dr Justin Thomas is an associate professor at Zayed University

Please visit the site: <http://www.thenational.ae/opinion/comment/can-an-artefact-help-us-understand-the-ancients>

THE WRONG KIND OF THRONE: TOILET DISCOVERED AT 2,800-YEAR-OLD SHRINE REVEALS BIBLICAL TALE OF DESECRATION OF RELIGIOUS SITES BY KING HEZEKIAH, BY RICHARD GRAY

It was one of the most zealous religious crackdowns in the history of Judaism and saw the numerous cults in ancient Judah smashed to pieces.

Now evidence of the reforms implemented by King Hezekiah, which are described in the Old Testament, around 2,800 years ago have surfaced in a surprising form.

Archaeologists digging at the site of an ancient gate to the ruined city of Tel Lachish in Israel have uncovered the remains of a shrine that was desecrated during the purges in the 8th century BC.

The Lachish city gate, as it is known, consists of six chambers which contain signs of city life at the time.

In one of the chambers, however, is a shrine that once had walls covered with white plaster and two altars decorated with raised corners - known as horns.

These, however, appear to have had their tops deliberately cut off, a sign that there had been an attempt to end the spread of religious cults and centralise worship in Jerusalem.

But perhaps the greatest sign that the shrine had been the site of one of King Hezekiah's crackdowns was the installation of the toilet within the inner sanctum of the shrine.

This stone with a hole cut through the centre would have been the ultimate desecration of the Holy site.

Sa'ar Ganor, excavation director on behalf of the Israel Antiquities Authority, said: 'Steps to the gate-shrine in the form of a staircase ascended to a large room where there was a bench upon which offerings were placed.

'An opening was exposed in the corner of the room that led to the holy of holies.

'To our great excitement, we found two four-horned altars and scores of ceramic finds consisting of lamps, bowls and stands in this room.

'It is most interesting that the horns on the altar were intentionally truncated. That is probably evidence of the religious reform attributed to King Hezekiah.'

WHY INSTALL A TOILET?

Putting a latrine at a holy site was considered to be sacrilege as it soiled a religious location that was to be respected.

Evidence of abolishing cultic locations by installing a toilet in them is known in the Bible.

In the case of Jehu destroying the cult of Ba'al in Samaria, the bible states: "And they demolished the pillar of Ba'al, and demolished the house of Ba'al, and made it a latrine to this day" (II Kings 10:27).

The discovery at Tel Lachish, however, is the first time that an archaeological find confirms this practice.

Please visit the site: <http://www.dailymail.co.uk/sciencetech/article-3811712/The-wrong-kind-throne-Toilet-discovered-2-800-year-old-shrine-reveals-Biblical-tale-desecration-religious-sites-King-Hezekiah.html> [Go there for pix]

ANCIENT ROMAN COINS FOUND IN RUINED JAPANESE CASTLE, BY EMIKO JOZUKA

When archeologist Hiroyuki Miyagi heard that a bunch of ancient Roman and Ottoman coins had been unearthed from the ruins of an old castle in Okinawa, he initially thought it was a hoax.

"I couldn't believe they'd found coins from the Roman empire in Katsuren castle," Miyagi, who works at Okinawa International University, told CNN.

"I thought that they were replicas that had been dropped there by tourists."

A chance discovery

Since 2013, a team of archeologists from Uruma city's local Board of Education has been excavating Katsuren castle -- a UNESCO world heritage site -- which is located in Okinawa, Japan's southernmost prefecture.

Yet the ancient coins -- ten in total -- were only discovered recently when Toshio Tsukamoto, a researcher from Gangoji temple cultural properties department, spotted them when he traveled to the castle from Nara. The Uruma Board of Education announced their discovery Monday.

"I'd come to analyze artifacts like Japanese samurai armor that had been found there when I spotted the coins," Tsukamoto, told CNN.

"I'd been on excavation sites in Egypt and Italy and had seen a lot of Roman coins before, so I recognized them immediately."

The coins were later submitted to Miyagi, who examined them using X-ray technology.

"You can see the engravings on the coins clearer when you use X-rays," Miyagi, told CNN.

The archeologist found that the Ottoman coin had inscriptions that dated it to 1687, while the Roman coins appeared to be much older -- from at least 300 to 400 AD.

Mysterious origins

It's hard to tell where exactly these coins came from, Masaki Yokou, a spokesperson from Uruma city's Board of Education, told CNN.

Dubbing it a "strange and interesting find," Yokou explained that Katsuren castle was known to have trade relations with China and other neighboring Asian countries in the 14th and 15th century.

"We don't think that there is a direct link between the Roman empire and Katsuren castle, but the discovery confirms how this region had trade relations with the rest of Asia," Yokou, told CNN.

Both Yokou and Tsukamoto speculated that the coins ended up in Japan after passing through different trade routes that linked the West to Asia.

Miyagi, who called the discovery "remarkable," said the next step was to try and find out how exactly these coins ended up in Japan.

Other artifacts found at Katsuren castle's excavation site include Japanese ceramics and objects used by castle inhabitants, as well as Chinese coins and ceramics that would have been acquired through trade with China.

Please visit the site: <http://edition.cnn.com/2016/09/27/luxury/ancient-roman-coins-japan/index.html> [Go there for pix]

CAVES IN WHICH JEWISH REBELS HID FROM ROMANS 2,000 YEARS AGO FOUND IN GALILEE

As the First Jewish War raged in ancient Palestine, villagers would hide in impressively inaccessible cliffside caves as the Roman armies marched through.

Philippe Bohstrom

While surveying natural limestone caves in the Galilee, scientists have discovered hundreds of limestone caves in which Jews hid when Roman troops came marching through 2,000 years ago, during the Great Jewish Revolt (66-70 CE).

Extensive embellishment such as baths and candle niches carved into the rock show that the caves had been prepared for extensive habitation.

Water cisterns carved into the rock, as well as pitchers, pottery shards, coins, and other artifacts dating to the 1st century C.E. were found in many of the cliff shelters, say Dr. Yinon Shivtiel from the Safed Academic College and Vladimir Boslove of the Israeli Cave Research Center. The work was funded by the Safed Academic College Research Foundation.

The Jewish historian Josephus wrote extensively about the Roman-Jewish wars. Some historians have wondered whether he didn't embellish his role in the Jewish uprising, glorifying his own actions. But the discoveries of the caves in the Galilee, which were made over a period of years, lend credence to his accounts.

When Josephus was ours

At least when the Great Jewish Revolt, a.k.a. the First Jewish War, began, the man born as Yoseph ben Matiyahu was fighting on the side of the Jews, commanding the Jewish rebel forces in the Galilee.

The outmanned, "outgunned" rebels were facing the full might of the Roman army, under Vespasian and his son Titus.

Protecting the people of Galilee was an almost impossible task, since the Jewish soldiers he commanded were poorly equipped and lacked combat experience. Josephus' defensive strategy involved adding walls and otherwise fortifying towns and caves in the vicinity: "Moreover, he built walls about the caves near the lake of Gennesar, which places lay in the Lower Galilee." (The War of the Jews, (II, 572 - 576).

Five of six settlements that the Jewish general apparently fortified have been identified: Tiberias, Arbel, Akhbara, Meron and Caphareccho, which remains unidentified.

"During my research, it became clear that the settlements mentioned in Josephus' writings were located in close proximity to steep cliffs in which there were natural caves," Shivtiel told Haaretz.

A dangerous climb

Much of the Land of Israel today sits on a prehistoric seabed, part of the bottom of the Tethys Sea. (That is why hikers in the hills find fossil seashells and the like, and a couple of plesiosaurs have also been found.) The rock comprising is largely chalky and soft. Throughout Israel, caves were easily carved out of the chalky sedimentary stone by nature, and by man.

Based on Josephus' writings, Shivtel became convinced that the Jews hid in natural caves in the cliffside when fleeing from Roman forces approaching their villages. That may have been a precarious endeavor since, from the bottom at least, the caves can only be reached by rappelling down, or by climbing up using ropes or high ladders. Anybody seeking shelter in places that hard to reach had to have been desperate, he claims.

Or, a passage in Josephus book War of the Jews about King Herod's cunning may hint at an alternative way to get into those caves.

Hundreds of years earlier, when the people of Galilee had risen up in rebellion against the despot king, Herod counterattacked and the rebels hid inside caves on Mount Arbel, situated on extremely steep cliffs towering above a very deep valley. So Herod constructed wooden chests, which he filled with soldiers. The boxes were lowered to the cave mouths from the top of the cliffs. Most of the people inside the caves were soon killed by Herod's soldiers, who fired burning projectiles into the caves. (Antiquities, XIV. 413-430, The War of the Jews, I. 304-313).

Shivtel suspects this could be how older men and women, and children, might have reach the caves in Josephus' time. Perhaps it is what inspired Josephus in the first place to hide the people in the natural caves of the Galilee.

Hidden town in the cliff

What is certain is that the caves began naturally but were prepared for a long stay. Water cisterns were carved out of the bedrock, to collect water runoff from the vertical walls. Niches were hewn in the walls that still contain ash remnants from candles.

Coins, pitchers and cooking pots were also found. The clay plaster, coins and pottery could all be dated to the first century C.E.

At least some of the caves were huge, as much as four stories in height, and tunnels were carved out of the rock allowing access to other caves. Even balconies were discovered, enabling the cave dwellers to watch out for hostiles.

Another remarkable discovery was six ritual baths, one found in Akhbara and five in Arbela, that received at least some of their water from still-dripping stalactites. Channels were carved out to the external rock wall, so rainwater runoff could accumulate, and stairs leading to the baths were cut into the rock.

Preparing mikvehs goes far beyond the essentials needed to sustain life. That in and of itself indicates in Shivtel's mind that priests were hiding in the caves, it seems that

Kohanim (descendants of Aaron) who lived in the Galilee before the revolt. (Then, cleansing or purifying in the ritual bath was not a requirement for the general Jewish community, but it was for the priests. In acknowledgement of God's purity, priests and Levites were required, on pain of death, to wash their hands and their feet before sacrificing - Exodus 30:17-21).

Who is this Josephus anyway

The most important documents on the history of the Great Jewish Revolt are Josephus' books War of the Jews and Jewish Antiquities.

Josephus was born in Jerusalem 37 C.E. and in the 2,000-plus years since then, he has become a sharply controversial figure, based on the belief that he abandoned his brother Jews and joined the Romans as the revolt wound down in 67 CE. Moreover, some historians have accused Josephus of embellishing his histories and inflating his importance.

One difficulty in establishing his verisimilitude, Josephus' critics charge, is that he is the only source on his part in the Jewish-Roman war. Another is that he wrote after the events, with the foreknowledge that war would end in disaster for the Jews, culminating in the destruction of the temple in Jerusalem.

For one thing, what historian hasn't written with hindsight. For another, where checkable, Josephus seems to have been an extremely accurate source regarding military actions in which he was involved.

Whatever the case, neither Josephus nor the Jews in the Galilee could withstand the Roman war machine, which broke down all resistance in the Galilee.

The researchers discovered dozens of flattened Roman arrow-heads that had been shot into the caves, some striking the cliffs and becoming embedded in the rock face. These findings certainly connect the caves with Roman-Jewish violence.

Yet Shvitzel assumes that most of the civilians who took refuge in the caves survived. The Galilee could not have had flourishing Jewish communities in the second and third century C.E. if the population had been slaughtered, he points out.

The last stand

Josephus made his last stand not in some cave, but in Jotapata. In the spring of 67 C.E., a vast Roman army of 60 000 legionnaires, equipped with siege machines, battering arms and 160 throwing machines (catapults for spears, scorpio for arrows and ballista for stones) stood ready to assault the cliffside fortress in the Golan.

For 49 days the Jewish defenders held their own, despite being showered by stones, arrows and spears. Josephus, commander of the Jewish forces in Jotapata, described the battle as one of the bloodiest in the revolt.

When the fortress could no longer be held, Josephus escaped with a dozen companions and hid in a cave. They decided to help each other commit suicide in order not to fall in enemy hands, and drew lots to decide in order in which they should die.

Josephus however reportedly fiddled with the tickets to be last, and thus remained alive. Captured by the Romans, he was imprisoned and shackled, and would certainly have been put to death – except for his sycophantic prophecy, foretelling that Vespasian would become a great emperor.

The flattered Vespasian spared the Jewish general. When the prophecy was in fact fulfilled, in due time, Josephus was set free and showered with gifts – which Josephus “receipted” (acknowledged) by adopting the emperor's family name, Flavius. And that is why he is known as Josephus Flavius to this very day.

Please visit the site: <http://www.haaretz.com/jewish/archaeology/1.744834> [Go there for pix]
