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In Ancient Egypt, Life Wasn't Easy for Elite Pets Animal skeletons found
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Jordan's Black Desert may hold key to Earth's first farmers **page 58**

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ΣΥΝΕΔΡΙΑ - CONFERENCES/WORKSHOPS

ISA 2016, 15-20 MAY, 2016, KALAMATA, GREECE

Dear Colleagues

We are happy to announce the launch of the web-page for the 41st International Symposium on Archaeometry (ISA2016) scheduled to take place in Kalamata, Greece from 15-20 May, 2016.

ISA symposia are the well-established (since 1961) big scientific events in the field of Archaeometry, Archaeological Science and are attended by an international audience of several hundred scholars from diverse fields, such as archaeology, anthropology, art history, physics, chemistry, materials science, geology, biology, conservation science, computer science, etc.. Since the 1980s the symposium is taking place in an alternating mode at locations in Europe and in the Americas – also in Asia (2005) – organized by respective local organizing committees.

The sessions for ISA2016 are:

REMOTE SENSING,
GEOPHYSICAL PROSPECTION AND FIELD ARCHAEOLOGY
ARCHAEO-CHRONOMETRY
HUMAN-ENVIRONMENT INTERACTIONS AND BIOMATERIALS-
BIOARCHAEOLOGY
STONE, PLASTER AND PIGMENTS
CERAMICS,
GLAZES, GLASS AND VITREOUS MATERIALS
METALS AND METALLURGICAL CERAMICS
-Special Theme Session-1: ENVIRONMENTAL REMOTE MONITORING FOR
ARCHAEOLOGY AND CULTURAL HERITAGE
-Special Theme Session-2: THE BEGINNING OF THE BRONZE AGE IN EASTERN
MEDITERRANEAN
- Panel Discussion: HISTORY, ARCHAEOLOGY AND ARCHAEOLOGY
DEFINING A RELATIONSHIP

What is really important is:

- to submit your ABSTRACT before December 15, 2015
- to book your accommodation as early as possible and ideally before end of January 2016
- and of course to save the dates of 15- 20 May, 2016

Looking forward to welcoming you all in Kalamata!

Nikos Zacharias,

Chair of ISA2016 Organization

Please visit the site: www.isa2016.uop.gr

**"HERITAGE RESEARCH TO
CONSERVATION PRACTICE" INDOOR AIR
QUALITY - IN HERITAGE AND HISTORIC
ENVIRONMENTS, 12TH INTERNATIONAL
CONFERENCE, THINKTANK, BIRMINGHAM,
UK, 3-4 MARCH 2016**

Birmingham Museums Trust is pleased to announce it will be hosting the 12th International Conference held by IAQ. The conference will be held at Thinktank, the Trust's Science and Industry Museum.

Conference Theme: Papers are encouraged on topics that include information on: new trends in pollution monitoring, understanding the levels of risk to collections, cross disciplinary projects, the application of shared knowledge for mitigation, material emissions, building/demolition projects, putting research into practice and projects that have highlighted Heritage Science to the wider sector.

Booking:

1 June - 31 August 2015

Please check the IAQ website for further details, including conference advert, and template for abstract submission: [URL:http://iaq.dk/iap.htm](http://iaq.dk/iap.htm)

Conference fee:

Early Bird conference fee (1 June - 31 October 2015): UKP164

Conference fee after 01 November 2015: UKP200

Booking is available on line via:

[URL:https://uk.patronbase.com/ BirminghamMuseums/Productions](https://uk.patronbase.com/BirminghamMuseums/Productions)

13TH ICOM-CC WET ORGANIC ARCHAEOLOGICAL MATERIALS CONFERENCE (WOAM), FLORENCE, ITALY, MAY 16-21, 2016

ICOM-CC's Wet Organic Archaeological Materials Working Group (WOAM) exists to: disseminate scientific research in the field of wet organic archaeological materials; to promote the application of new materials and technologies for conservation, investigate new tools for analysis and documentation; present relevant case studies in the conservation of wet organic archaeological materials; identify further areas of research and to facilitate networking for future collaborative activities.

For the 2013-2016 Triennial period, WOAM established a particular focus on the following subjects:

- The ethics and practicalities of treating waterlogged materials, especially large structures or large assemblages
- Documentation and characterization techniques for recording and assessing wet organics
- In situ preservation of wet organic archaeological materials and sites?
- New treatment techniques and continued review of established methods, for example Kauramin, PEG, Sugars, Alum etc. In particular, we welcome studies that address the long-term performance and stability of treatments, especially those that reassess the condition of the materials treated as part of the International Comparative Wood Study and currently stored in Trondheim
- The treatment of composite materials
- The treatment of non-wood organics
- The display and storage of waterlogged (and previously waterlogged) organics
- The role of sulfur and other contaminants in the deterioration of wood and other organics and ways to mitigate these effects

Although papers and posters addressing these subjects are most welcome, the list is not inclusive and we encourage all original submissions covering topics relevant to the analysis, treatment, study and care of wet organic archaeological materials for consideration.

Please submit abstracts for papers or posters to ewilliams@cwf.org name and contact details as well as the body of the abstract. They should not contain images or graphs.

Key Dates to remember:

- Sept 15, 2015: Submission of abstracts for papers or posters
- October 30, 2015: Notification of speakers and authors
- March 30, 2016: Submission of all papers and posters for inclusion in conference post-print

WOAM will be transferring to an entirely peer-reviewed publication for the Florence post-prints. Please note, due to firm publisher cut-off dates, papers not received by March 30, 2016 cannot be included in the published Florence Proceedings.

Emily Williams
Conservator of Archaeological Materials
The Colonial Williamsburg Foundation
PO Box 1776
Williamsburg VA 23187
757-220-7079



**CENTER FOR THE STUDY OF
CONSERVATION MATERIALS (CESMAR7),
VII CONGRESS "COLOR AND
CONSERVATION 2015", "FROM OIL
PAINTINGS TO ACRYLICS, FROM
IMPRESSIONISM TO CONTEMPORARY,
ART: STUDIES, RESEARCHES, SCIENTIFIC
SURVEYS AND CONSERVATIVE
TREATMENTS", POLITECNICO DI MILANO,
NOVEMBER 13-14, 2015
CALL FOR PAPERS AND POSTERS**

Submission Deadline: July 6, 2015, 23:00

Organized by:

Centro per lo Studio dei Materiali per il Restauro (CESMAR7)
[URL: http://www.cesmar7.org](http://www.cesmar7.org)

Color and Conservation 2015 is focused on the conservation of modern and contemporary art, a challenging field that still requires a systematization. The principal aims of the two-days conference are:

The diffusion of information on contemporary art materials and main degradation processes (from oil paints to plastics). Particular significance will be devoted to conservation issues and solutions with a practical approach, as well as to innovative materials and methods.

Sessions:

- XIX century/early XX century artworks: materials characterization, degradation processes and challenges with respects to traditional materials.
- Acrylics, alkyds, modern oils and commercial colors: from characterization analysis to issues related to conservative operations.
- Outdoor polychrome sculptures and artworks, mixed media, plastics, design objects
- Case studies: the conservators' experiences

Submission of abstracts deadline: July 6, 2015, 23:00

Notification of abstracts acceptance: Until July 20, 2015

Full paper submission deadline for selected abstracts: September 15, 2015

Full paper publication of proceedings: Spring 2016

Registration: The selected Authors will be exempted from the registration fees, but previous registration is necessary.

Please send the following information to conference2015.cesmar7@gmail.com

Name

E-mail and phone number

Professional (job and institution) or student (institution and year of graduation)

For further information, please contact conference2015.cesmar7@gmail.com
+39 334 3914483

and see [URL:http://www.coloreconservazione2015.com](http://www.coloreconservazione2015.com)

CONFERENCE AND WORKSHOP
"PORTABLE X-RAY FLUORESCENCE
SPECTROSCOPY", BONNEFANTEN
MUSEUM, MAASTRICHT, THE
NETHERLANDS, JULY 9-10, 2015

Hosted by SRAL

Organised by Kate Seymour and Siska Losse

This two day meeting of lectures and accompanying demonstrations aims to highlight the possibilities and limitations of pXRF so that strong collaborations between conservators and conservation scientists can ensue. Emphasis on interpretation of acquired data from pXRF analysis will be given. The meeting was advertised in Conservation DistList Instance: 28:44 Monday, April 20, 2015.

Portable X-Ray Fluorescence Spectrometry (handheld and macro): friend or foe?"

Programme

Thursday 9 July 2015

- | | |
|---------|---|
| 9:30am | Registration |
| 10am | Quantitative, Qualitative, and everything in between: XRF and non-homogenous materials

Dr. Lee Drake
Bruker Nederland B.V |
| 10:30am | The Basic Quantum Mechanics of XRF Transitions

Erich Uffelman
Washington and Lee University, Virginia |
| 11:30am | The past and future of MA-XRF scanning

Joris Dik
TU Delft |
| 12am | Macro-XRF scanning in archaeological and museum sites: pros and cons

David Strivay
Centre Europeen d'Archeometrie,
University of Liege |

Friday 10 July 2-15

9:30am Optimising settings for handheld-XRF

Annelies van Loon
TU Delft / University of Amsterdam

10am Experiences with pXRF investigation: three case studies

Jorinde Koenen
Frans Hals Museum / De Hallen,
Haarlem

10:30am How to combine and interpret the results of macro XRF scanning,
handheld XRF and x-sections

Sabrina Meloni and Susan Smelt
Mauritshuis, The Hague

11:30am Revelations of scanning MA-XRF: two case studies of the
Rijksmuseum

Anna Krekeler
Rijksmuseum Amsterdam

12pm Macro-XRF scanning: problems in interpretation

Petria Noble
Rijksmuseum Amsterdam

Afternoons

Demonstrations of the following four instrumentations will be given to four breakaway
groups

Instrumentation

Bruker Tracer III SD pXRF
Erich Uffelman

2D scanning system for in situ analysis
David Strivay

(To be decided)
Joris Dik

Bruker Tracer Handheld system Lee Drake

A visit to the Bonnefanten Museum Highlights (with guide) will be arranged on
Thursday, 9 July 2015 at 4pm. The tour will cost Euro 10 or free with an ICOM card.

The conference will provide the opportune venue for conservators and researchers in the field of material-technical investigation of paintings to exchange ideas and information on this subject.

Students will be most welcome: Delegates will be selected on a first come basis.

The event will be in English.

The conference and workshops will take place in the auditorium of the Bonnefanten Museum, Maastricht which has a capacity of 60.

Conference and Workshop Fees

Standard: Euro 195:00

Students: Euro 40:00

Conference fees will include lunches. A dinner (cost not included) will be organised on Thursday evening.

Registration forms are available at info@sral.nl

Proof of studentship will be required.

SRAL is a leading institute specialised in the conservation and restoration of paintings, sculptures, contemporary artworks and historic interiors. We provide an integrated approach to conservation issues through research, consultancy and education.

RADIOCARBON 2015, COMING DEADLINES

Dear Colleagues,

In order to give more time to those who have yet to submit an abstract, the Organizing Committee would like to announce the extension of two key deadlines.

1. Abstract submission deadline: extended **from June 30, 2015 to July 30, 2015**.

Link : <http://radiocarbon2015.ucad.sn/index.php/new-call-for-abstracts>

Email address for submission: radiocarbon2015_program@ucad.edu.sn

2. “Early bird” registration deadline> extended **from July 30, 2015 to September 17, 2015**.

Link : <http://radiocarbon2015.ucad.sn/index.php/registration2>

Email address for registration: radiocarbon2015_finance@ucad.edu.sn

The Radiocarbon2012 and Radiocarbon2015 organizing committees are jointly offering a few travel grants for researchers (students, junior and senior scientists) who intend to participate in Radiocarbon2015.

Please check at <http://radiocarbon2015.ucad.sn> for more information.

We look forward to seeing you all in Dakar.

Best regards,

Prof. Oumar Ka

for the Organizing Committee

RESEARCH IN PROGRESS MEETING,
FRIDAY 13TH NOVEMBER 2015,
EXPERIMENTAL TECHNIQUES CENTRE,
BRUNEL UNIVERSITY, UK

Dear colleagues,

The deadline for abstracts for the HMS Research in Progress to be held at Brunel University the 13th of November 2015 has been extended to the 30th of July.

Please follow the link for more information <http://hist-met.org/meetings/25-new-articles/73-hms-research-in-progress-2015.html>

Acceptance of papers for oral and poster presentation and the programme and location will be sent on the 5th of August

So send your abstracts and register

And I'm looking forward to see you all at Brunel University

Kind regards

Dr Lorna Anguilano, BSc, MSc, PhD
Research Fellow

Connect with ETC on [Twitter](#)

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Experimental Techniques Centre

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www.brunel.ac.uk

www.brunel.ac.uk/etc

www.brunel.ac.uk/researchlife

**10TH INTERNATIONAL CONFERENCE ON
STRUCTURAL ANALYSIS OF HISTORICAL
CONSTRUCTIONS, SAHC 2016, ANAMNESIS,
DIAGNOSIS, THERAPY, CONTROLS 13-15
SEPTEMBER 2016, LEUVEN, BELGIUM,
CALL FOR ABSTRACTS**

Join international experts to discuss and review upcoming trends and technologies in the analysis of historical constructions in Leuven, Belgium and submit your abstract by July 10th 2015 (extended deadline)

Conference topics preventive conservation, maintenance and monitoring - historic and innovative mortars and binders -non-destructive testing, inspection and structural monitoring techniques - adobe and vernacular constructions - conservation of the 20th century architectural heritage - foundation and geotechnical problems - structural assessment and intervention of archaeological sites - theory and practice of conservation - repair and strengthening techniques - analytical and numerical approaches - in-situ and laboratory experimental results - interaction between innovative and traditional materials - seismic behavior and retrofitting - rehabilitation, re-use and valorization of cultural heritage buildings - case studies

Specific themes innovation and heritage - preventive conservation - computational strategies - certification and standardization - values and sustainability - subsoil interaction

Keynotes

M. Blondet (Catholic University of Peru, PE)
D. Laefer (University College Dublin, IE)
A. Miltiadou (Hellenic Ministry of Culture, GR)
C. Modena (Università degli studi di Padova, IT)
E. Verstryngge & D. Van Gemert (KULeuven, BE)
Sun Xun (South-East University, CN)

Thematic chairs

Ö. Cizer (BE) - M. DeJong (UK) - S. Della Torre (IT) - H. Garrecht (DE) - J.G. Rots (NL) - R. Van Hees (NL) - G. De Felice (IT)

The Raymond Lemaire International Centre for Conservation and the Civil Engineering Department of the University of Leuven, with the support of the UNESCO chair on preventive conservation, maintenance and monitoring of monuments and sites, will organize the 10th anniversary edition of the International Conference on Structural Analysis of Historical Constructions (SAHC2016).

The theme of the conference is “Anamnesis, Diagnosis, Therapy, Controls”, which emphasizes the importance of all steps of a restoration process in order to obtain a

thorough understanding of the structural behavior of built cultural heritage. Papers are invited for presentation and poster sessions on general topics and specific themes.

Organizing Committee

Prof. K. Van Balen, chair
Prof. E. Verstrynghe,
Prof. G. De Roeck,
Prof. I. Wouters and
Prof.em D. Van Gemert, co-chair

International Advisory Committee

Prof. P. B. Lourenco, Prof. P. Roca and Prof. C. Modena

Please visit the site: <http://kuleuvencongres.be/sahc2016>

**2ND CIRCULAR, CALL FOR PAPERS,
WORKSHOPS AND POSTERS, 10TH ICAANE,
25–29 APRIL, 2016, OREA, AUSTRIAN
ACADEMY OF SCIENCES, VIENNA,
AUSTRIA**

On behalf of the Organizing Committee we kindly invite all scholars working on subjects related to Near Eastern Archaeology to participate in the 10th International Congress on the Archaeology of the Ancient Near East (10ICAANE) The focus of the 10ICAANE comprises Ancient Near Eastern Archaeology, with special attention to Prehistoric studies, Ancient Near Eastern, and Egyptian Archaeology, as well as Islamic Archaeology. A specific focus will be given to connections between the Ancient Near East and the Early Aegean.

As uncertainties in the submitting procedures occurred the following information might help:

WORKSHOP submission:

- The ideal proposal for a WORKSHOP will consist of an abstract about the topic, a preliminary list of participants that already agreed to participate, and those who are still not sure, their intended contribution the estimated number of participants as well as the timeframe needed.
- The organizer of a WORKSHOP has to clarify these details in advance. This allows the ICAANE organizers to see if enough infrastructure will be available.
- In case the Workshop cannot be accepted the potential participants still can hand in individual contributions.
- We thus guarantee all the potential participants a prolonged deadline until July 21 for handing in individual contributions - in case the workshop will not be evaluated positively. We also will see to the fact that evaluation will be finalized soon after the deadline for the participants to be able to obtain the early bird fee.
- All potential participants have to register but registration can be done also AFTER acceptance of contributions – be it a workshop or an individual contribution.

PAPER submission:

- Abstracts have to be submitted via mail to 10icaane@oeaw.ac.at • Please, name the section you want to contribute to • All potential participants have to register but registration can be done also AFTER acceptance of contributions – be it a workshop or an individual contribution.
- We also will see to the fact that evaluation will be finalized soon after the deadline for the participants to be able to obtain the early bird fee.

GENERAL

PAPERS CAN BE SUBMITTED FOR REVIEW FROM NOW ON (16 MARCH, 2015)
OFFICIAL REGISTRATION WILL START 1 APRIL, 2015 § All speakers are requested to observe a 20 minutes limit for their papers § All speakers must be registered in the congress § No papers or posters dealing with unprovenanced artefacts will be

accepted § Abstracts submitted for papers, workshops or posters should be no longer than 200 words.

§ All submitted abstracts will be evaluated by the Organizing Committee, information on accepted proposals will be sent via e-mail.

§ The abstracts of the accepted papers, workshops or posters will be published on our website by October 2015 DEADLINE FOR SUBMISSION OF ABSTRACTS FOR PAPERS, WORKSHOPS AND POSTERS:

30 JUNE, 2015

Contact: 10icaane@oeaw.ac.at

SECTIONS/THEMES

Special consideration will be given to the following themes:

1. Transformation & Migration
2. Archaeology of Religion & Rituals
3. Ancient Near Eastern Environments: Shifts, Impacts & Adaptations
4. Prehistoric and Historical Landscapes & Settlement Patterns
5. Economy & Society
6. Excavation Reports & Summaries
7. Images in Context: Agencies, Audiences & Perception
8. Islamic Archaeology

POSTERS

- At least one author of the poster has to register (including conference fees) for the congress.
- Any kind of work in progress related to Near Eastern Archaeology will be considered.
- Accepted poster format is up to A0 (recommended).
- Posters can be displayed from Monday lunchtime and have to be taken down on Friday morning.
- There will be a special poster Session on Tuesday afternoon with the possibility of discussing the presented research on the spot.

WORKSHOPS

Workshops will be accepted after evaluation by the scientific committee – according to the space available.

Participants wishing to organize a workshop are invited to propose themes to the Organizing Committee and submit an abstract. Workshops must not last more than one day.

Proponents must provide at least 6, maximum 15 active (and registered including conference fees) participants for each workshop (list of participants has to be submitted together with the abstract).

REGISTRATION

Registration will be possible from 1 April, 2015 onwards.

To register, please, go to our website (www.orea.oeaw.ac.at/10icaane.html). Written confirmation will be sent by electronic mail following registration. For payment and modalities please, see there.

Registration fees (until 31 August, 2015, rising from 1 September, 2015)

Participants until 31 August, 2015 from 1 September, 2015 Regular Fee 290 € 360 €
Students 100 € 120 €

Exhibitors' Stalls please contact: 10icaane@mondial.at Flyers in conference packs 150 €
200 € The registration fee for the congress covers attendance of all congress sessions and
social events, and congress documents as well as abstract booklet.

A ONE DAY Pass for Participants (100 €) and Students (40 €) will be available at the
congress office.

To register as student, please send the number and validity period of your Student ID
Card. Please, note that student IDs will be checked during registration.

The Organizing Committee of the 10th ICAANE Vienna 2016 10icaane@oeaw.ac.at
www.oeaw.ac.at/10icaane.html

Please visit the site:

http://www.oeaw.ac.at/fileadmin/user_upload/veranstaltungen/2016/2nd_Circular_10_icaane_FAQs_and_Call_for_papers.pdf [Go there for better programming]

ΠΑΝΕΛΛΗΝΙΟ ΣΥΝΕΔΡΙΟ ΨΗΦΙΟΠΟΙΗΣΗΣ
ΠΟΛΙΤΙΣΤΙΚΗΣ ΚΛΗΡΟΝΟΜΙΑΣ 2015,
ΒΟΛΟΣ, 24-26 ΣΕΠΤΕΜΒΡΙΟΥ, 2015,
ΠΑΡΑΛΙΑΚΟ ΣΥΓΚΡΟΤΗΜΑ
"ΠΑΠΑΣΤΡΑΤΟΥ"- ΠΑΝΕΠΙΣΤΗΜΙΟ
ΘΕΣΣΑΛΙΑΣ

Μεγάλη ανταπόκριση βρήκε στον επιστημονικό κόσμο σε Ελλάδα, Κύπρο και το εξωτερικό η ανακοίνωση της διοργάνωσης, για πρώτη φορά στην Ελλάδα, ενός καινοτόμου και πρωτοπόρου -σε ό,τι αφορά τη φιλοσοφία του- Συνεδρίου, που αφορά την Πολιτιστική Κληρονομιά και την Ψηφιοποίησή της, με τη χρήση Νέων Τεχνολογιών και μάλιστα δόθηκε παράταση για την υποβολή των εισηγήσεων και των POSTERS μέχρι τις 31/7/2015.

Το ιδιαίτερα σημαντικό αυτό Συνέδριο για την Ψηφιοποίηση της Πολιτιστικής Κληρονομιάς 2015 διοργανώνεται από σοβαρούς Φορείς της Ελλάδας, είναι αποτέλεσμα μιας μεγάλης συνεργασίας μεταξύ του Τ.Ε.Π.Α.Κ.(Κύπρος) και του Δευτεροβάθμιου Μη Κυβερνητικού Οργανισμού "Δίκτυο ΠΕΡΡΑΙΒΙΑ" (Ελλάδα) σε θέματα Επιστημών και το συνδιοργανώνουν το Εργαστήριο Ψηφιακής Πολιτιστικής Κληρονομιάς του Τεχνολογικού Πανεπιστημίου Κύπρου (Τ.Ε.Π.Α.Κ.), το Εργαστήριο Μη Καταστροφικών Τεχνικών Σχολής Τεχνολογικών Εφαρμογών ΑΕΙ ΠΕΡΡΑΙΑ Τεχνολογικού Τομέα και το Δίκτυο ΠΕΡΡΑΙΒΙΑ".

Πρόκειται για το " Πανελλήνιο Συνέδριο Ψηφιοποίησης Πολιτιστικής Κληρονομιάς - 2015 " ("Pan-Hellenic Conference on Digital Cultural Heritage-2015"), που θα γίνει στην Ελλάδα, στην όμορφη πόλη του Βόλου, με επιλογή του Δικτύου ΠΕΡΡΑΙΒΙΑ", που είναι ένας από τους βασικούς διοργανωτές, κατά το χρονικό διάστημα από την Πέμπτη 24 έως και το Σάββατο 26 Σεπτεμβρίου 2015 και υποστηρίζεται από την Περιφέρεια Θεσσαλίας, τον Δήμο Βόλου, το Πανεπιστήμιο Θεσσαλίας, πολλά άλλα Πανεπιστήμια της Ελλάδος και του Εξωτερικού, Ιδρύματα, Ινστιτούτα ερευνών, Εργαστήρια απ' όλο τον κόσμο και αποτελεί το μεγάλο κάλεσμα και τη μεγάλη συνάντηση των Ελλήνων και Κυπρίων επιστημόνων που ασχολούνται με την Ψηφιοποίηση της Πολιτιστικής Κληρονομιάς του Ανθρώπου.

Το συνέδριο θα πραγματοποιηθεί στα αμφιθέατρα «Γ. Κορδάτος» και «Γ. Σαράτσης», στους φιλόξενους χώρους του Παραλιακού Συγκροτήματος "Παπαστράτου" του Πανεπιστημίου Θεσσαλίας, που παρέχει κάθε δυνατή υποστήριξη στη μεγάλη αυτή πρωτοβουλία.

Για τον λόγο αυτό έχει προσκληθεί όλη η επιστημονική και ερευνητική κοινότητα, από την Ελλάδα και την Κύπρο, καθώς και όλοι οι Έλληνες ερευνητές ανά την υφήλιο, να υποβάλλουν τις εισηγήσεις και τα Posters τους μέχρι τις 30 Ιουνίου 2015, μέσω της επίσημης ιστοσελίδας του Συνεδρίου που είναι η www.euromed2015.eu.

Το Συνέδριο αυτό έχει την πλήρη στήριξη των επιτυχημένων Συνεδρίων Euromed, που διοργανώνονται με ιδιαίτερη επιτυχία, κάθε δύο χρόνια, στη Λεμεσό της Κύπρου, από το Εργαστήριο Ψηφιακής Πολιτιστικής Κληρονομιάς του Τεχνολογικού Πανεπιστημίου Κύπρου (ΤΕ.ΠΑ.Κ.) και απόφαση των διοργανωτών και της Οργανωτικής Επιτροπής του Πανελληνίου Συνεδρίου, που αποτελείται από έγκριτους επιστήμονες από την Ελλάδα και την Κύπρο, είναι η **θεσμοθέτηση της διοργάνωσης του στην Ελλάδα κάθε δύο χρόνια, επίσης, ήτοι το 2015, 2017, 2019.**

Το Συνέδριο αυτό απευθύνεται στο:

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

Οι ενδεικτικοί θεματικοί άξονες προβληματισμού είναι οι ακόλουθοι:

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

Στο τριήμερο του Συνεδρίου θα υπάρξουν πολλές ευκαιρίες να επιτευχθεί ανταλλαγή γνώσης και εμπειριών για τα αποτελέσματα της έρευνας στην πολιτιστική κληρονομιά και τις ψηφιακές τεχνολογίες και να συζητηθούν οι τρέχουσες και οι μελλοντικές εξελίξεις στον τομέα αυτό σε παγκόσμιο επίπεδο.

Επίσης, στο Συνέδριο αυτό θα συμμετέχουν ως εισηγητές εκπρόσωποι του Υπουργείου

Πολιτισμού ,αλλά και άλλων Υπουργείων , Ελληνικών και Κυπριακών Πανεπιστημίων , ερευνητικών κέντρων ,αλλά και ανεξάρτητοι επιστήμονες και ερευνητές ,που εμπλέκονται με κάθε τρόπο στο μεγάλο θέμα της μελέτης ,έρευνας και διάσωσης της πολιτιστικής μας κληρονομιάς.

Για συμπληρωματικές πληροφορίες, οι ενδιαφερόμενοι μπορούν να επισκέπτονται τον αποκλειστικό ιστότοπο του συνεδρίου : www.euromed2015.eu, μέσα από τον οποίο θα λαμβάνουν όλη την ενημέρωση για κάθε τι νεώτερο που θα αφορά τη Διοργάνωση του συνεδρίου και τους συνέδρους .

Όσοι επιθυμούν να συμμετάσχουν στο συνέδριο με ανακοίνωση ή με ανακοίνωση τοίχου (poster) μπορούν να τα υποβάλλουν ηλεκτρονικά ,μέσω της επίσημης ιστοσελίδας www.euromed2015.eu.

Διεύθυνση Facebook <https://www.facebook.com/digitalculturalheritage2015>

Με Εκτίμηση

Η Οργανωτική Επιτροπή του Συνεδρίου

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

ΣΤΟΙΧΕΙΑ ΟΡΓΑΝΩΤΙΚΗΣ ΕΠΙΤΡΟΠΗΣ

ΟΝΟΜΑΤΕΠΩΝΥΜΟ	ΦΟΡΕΑΣ	ΣΤΟΙΧΕΙΑ ΕΠΙΚΟΙΝΩΝΙΑΣ
	ΚΥΠΡΟΣ	
Dr Μαρίνος Ιωαννίδης	Διευθυντής Εργαστηρίου Ψηφιακής Πολιτιστικής Κληρονομιάς Τεχνολογικού Πανεπιστημίου Κύπρου - ΤΕΠΑΚ(Λεμεσός -ΚΥΠΡΟΣ)	E-Mail: marinos.ioannides@cut.ac.cy
	ΕΛΛΑΔΑ	
Dr Ιωάννης Βαράλης	Επικ. Καθηγητής Τμήματος Ιστορίας - Αρχαιολογίας Πανεπιστημίου Θεσσαλίας -ΒΟΛΟΣ-ΕΛΛΑΔΑ	E-Mail: iovaralis@uth.gr ,
Dr Θεόδωρος Γκανέτσος	Καθηγητής ΑΕΙ Πειραιά Τ.Τ.- Εργαστήριο Μη Καταστροφικών Τεχνικών Σχολής Τεχνολογικών Εφαρμογών ΑΕΙ ΠΕΙΡΑΙΑ Τ.Τ.- ΠΕΙΡΑΙΑΣ -ΕΛΛΑΔΑ	E-Mail: ganetsos@teipir.gr ,
Ηλίας Νομπιλάκης	τ. Καθηγητής Συντήρησης Λίθου ΤΕΙ ΑΘΗΝΩΝ .-ΑΘΗΝΑ-ΕΛΛΑΔΑ	E-Mail: elnobil@hotmail.com ,
Κων/νος Σκριάπας	Οικονομολόγος -Σύμβουλος Ανάπτυξης & Επιχειρηματικότητας- Πρόεδρος ΔΣ Δικτύου "ΠΕΡΡΑΙΒΙΑ"- Δευτεροβάθμια ΜΚΟ για τον Άνθρωπο και τον Πολιτισμό--ΕΛΛΑΔΑ	E-Mail: skriapask@gmail.com ,

www.euromed2015.eu

<https://www.facebook.com/digitalculturalheritage2015>

ΘΕΣΕΙΣ ΕΡΓΑΣΙΑΣ/ΥΠΟΤΡΟΦΙΕΣ –
JOB VACANCIES/FELLOWSHIPS

POSTDOCTORAL RESEARCH POSITION IN
THE MATERIAL CULTURE OF THE
ANCIENT MEDITERRANEAN AT THE
UNIVERSITY OF MICHIGAN

The Ancient World Project (Teaching and Learning for the Third Century: Changing the Way We Teach the Ancient World; <https://www.lrc.lsa.umich.edu/eliav/kelsey/about/>) in collaboration with the Department of Near Eastern Studies is seeking candidates for a 1-year postdoctoral position, renewable (although not guaranteed) for a second year, to begin September 1, 2015.

We are looking for people with broad graduate training in the archaeology and/or history of the eastern Mediterranean regions and their physical environment, with preference (although not a requirement) to the Graeco-Roman eras, and with some knowledge of the Jewish and/or Christian realms. They must also be comfortable and capable in researching ancient artifacts and writing about them. A PhD degree is required prior to appointment. The successful candidate will work on his/her own project for a minimum of 20 hours per week, and an additional 20 hours will be devoted to work for the Ancient World Project under the guidance and supervision of one of its senior members.

Salary for this position is \$50,000 for a 12-month appointment. The position also includes a full benefits package, \$2,000 research allowance, and up to \$3,500 in moving costs.

Only online applications will be accepted. To apply and upload your material, go to <http://tinyurl.com/q4wp54u>. You will need (1) a cover letter stating your interest in coming to the University of Michigan, and explaining your expertise and abilities to contribute to the Ancient World Project; (2) CV; (3) a 1-2 page personal research proposal for the year with detailed stages and timeline; (4) a writing sample, either a published or forthcoming article, or a chapter from a dissertation; (5) emails of two recommenders who will be asked to upload their letter separately.

Review of applications will begin immediately after June 20th and will continue until a hire is made. Please refer all questions to the project's director, Professor Yaron Eliav (yzeliav@umich.edu).

ZOOARCHAEOLOGY AND *NEW*
PALAEOENVIRONMENTS SHORT COURSES
AT SHEFFIELD UNIVERSITY -
REGISTRATION NOW OPEN!

Dear All,

Registration is now open for our Understanding Zooarchaeology I and Exploring Palaeoenvironments short courses, which will take place in the Department of Archaeology, University of Sheffield in September 2015.

These are an ideal introduction, or refresher for anyone with an interest in the field.

Understanding Zooarchaeology I: 7th-9th September 2015

Exploring Palaeoenvironments: 10th-11th September 2015

Cost:

£180/£120 (student/unwaged) each course

£220/£330 (student/unwaged) for both courses

The courses will include lectures, discussions and hands on practical classes. Participants will begin to develop the skills necessary to:

- Understand the principles of excavating animal bones.
 - Care for and store bones after excavation.
 - Identify different species from their bones and teeth.
 - Age and sex bones.
 - Recognise taphonomy, butchery and pathology.
 - Understand how zooarchaeological material is analysed and quantified.
-
- Analyse faunal remains and understand their value as palaeoenvironmental indicators.
 - Investigate the role of pollen and charcoal as indicators of environmental conditions.
 - Understand and employ the geoarchaeological evidence in palaeoenvironmental reconstructions.
 - Understand the role of traditional and modern archaeological analytical techniques for reconstructing past climatic conditions and vegetation.
 - Integrate the zooarchaeological, archaeobotanical and geoarchaeological evidence for the reconstruction of environmental conditions faced by past communities.

For further information please see:

<http://www.shef.ac.uk/archaeology/research/zooarchaeology-lab/short-course>

You can contact us at: zooarch-shortcourse@sheffield.ac.uk

We have had excellent feedback from participants on past courses. Andrew Lawson, Trainee Biological Curator at Manchester Museum, who attended one of our previous courses gives his review in his blog:

<https://traineecurator.wordpress.com/2012/04/23/sheffield-zooarchaeology-training-course/>

Follow us on Facebook at:

<https://www.facebook.com/pages/Sheffield-Zooarchaeology-Short-Course/100619023380021?ref=hl>

Please forward this information to anyone who you think might be interested. Apologies for cross-posting

Many thanks,

The Zooarchaeology Team, University of Sheffield

THE NATIONAL OCEAN SCIENCES ACCELERATOR MASS SPECTROMETRY (NOSAMS) JOB POSTING

The National Ocean Sciences Accelerator Mass Spectrometry (NOSAMS) facility at the Woods Hole Oceanographic Institution is searching for a Research Associate I/II who would be responsible for the maintenance, development, and operation of an AMS system.

Details of the position can be found here:

<http://www.candidatemanager.net/cm/Micro/JobDetails.aspx?&mid=YWWY&sid=BWCXW&jid=UUDBGTAZ&site=Research&a=Ya5kVOjNOCU%3d&b=ZXP0b8G%2b6bM%3d>

PHD POSITION AT ETH ZURICH

PhD PROJECT at ETH Zürich AIM: Optimizing the performance of the novel LA-AMS setup for radiocarbon analyses in carbonates and applying the method for highly resolved radiocarbon analyses in real samples **TASKS:**

- optimize the LA-AMS setup (hard- and software development)
- apply the setup to real samples (carbonaceous climate archives like stalagmites, corals, oysters)

- interpret the data in close collaboration with our international project partners
- explore further possible applications and sample materials (e.g. diamonds, organic materials)

TIME FRAME: start: May 2015 (or later), duration: 3 years

LOCATION: “Laboratory of Ion Beam Physics”, ETH Hoenggerberg (Prof. Hans-Arno Synal) and “Group of Trace Element and Microanalysis” (Prof. Detlef Günther)

Contact :

Marcus Christl (mchristl@phys.ethz.ch)

POSTDOCTORAL RESEARCH POSITION IN THE MATERIAL CULTURE OF THE ANCIENT MEDITERRANEAN AT THE UNIVERSITY OF MICHIGAN

The Ancient World Project (Teaching and Learning for the Third Century: Changing the Way We Teach the Ancient World; <https://www.lrc.lsa.umich.edu/eliav/kelsey/about/>) in collaboration with the Department of Near Eastern Studies is seeking candidates for a 1-year postdoctoral position, renewable (although not guaranteed) for a second year, to begin September 1, 2015. We are looking for people with broad graduate training in the archaeology and/or history of the eastern Mediterranean regions and their physical environment, with preference (although not a requirement) to the Graeco-Roman eras, and with some knowledge of the Jewish and/or Christian realms. They must also be comfortable and capable in researching ancient artifacts and writing about them. A PhD degree is required prior to appointment. The successful candidate will work on his/her own project for a minimum of 20 hours per week, and an additional 20 hours will be devoted to work for the Ancient World Project under the guidance and supervision of one of its senior members.

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Only online applications will be accepted. To apply and upload your material, go to <http://tinyurl.com/q4wp54u>. You will need (1) a cover letter stating your interest in coming to the University of Michigan, and explaining your expertise and abilities to contribute to the Ancient World Project; (2) CV; (3) a 1-2 page personal research proposal for the year with detailed stages and timeline; (4) a writing sample, either a published or forthcoming article, or a chapter from a dissertation; (5) emails of two recommenders who will be asked to upload their letter separately.

Review of applications will begin immediately after June 20th and will continue until a hire is made. Please refer all questions to the project's director, Professor Yaron Eliav (yzeliav@umich.edu).

Please visit the site: https://www.h-net.org/jobs/job_display.php?id=51011

KNOSSOS CURATOR, BRITISH SCHOOL AT ATHENS, FULL-TIME, FIXED TERM POSITION (5 YEARS)

The British School at Athens (an institute for advanced research in the Humanities and Social Sciences, located in Greece) seeks a full-time Curator to maintain its research centre at Knossos and to conduct original research. The appointment is for a fixed term of 5 years. You will have completed a doctorate or have comparable relevant experience (e.g. in conservation or collection management), and have defined an original research project which can be completed while in post at Knossos. Residence in Knossos is a requirement (rent-free housing is provided on-site): preference may therefore be given to applicants proposing a project focused on Knossos or the Knossian collections.

The Curator represents the British School on Crete. You will be required to deal with daily management of the centre's library, office, and hostel (the Taverna); to facilitate the work of resident and non-resident scholars using the Knossos facilities, notably by ensuring access to the holdings of the Stratigraphical Museum and maintaining that collection in good order; to organise and deliver postgraduate training courses; and to liaise with the staff of the Greek Archaeological Service. You will be capable of combining academic and managerial tasks in a flexible manner. You should also demonstrate a strong interest in enhancing the BSA's standing and outreach in Crete (for example, by arranging seminars and lectures), and in developing new ways to use the School's establishment for suitable academic and educational programmes. The duties of this post demand that you be able to communicate effectively in Greek, or demonstrate how you will acquire this level of command before taking up the post.

This is a fixed term appointment because the full-time office of Knossos Curator is intended to provide an opportunity for a fixed term to a person at an early stage in their academic career to develop their research activity and managerial skills in order to enhance their suitability for a permanent position in a university or related institution elsewhere.

The salary will be up to £23,000: health insurance and rent-free housing will be provided. The position is available from 1st September 2015: a later start date may be negotiated. A probationary period will apply.

Further details, including the job description, are available at: http://www.bsa.ac.uk/index.php?option=com_content&view=article&id=168:job-vacancy-knossos-curator&catid=14&Itemid=101

Informal enquiries about the post may be addressed to the School Director, Professor Catherine Morgan, by e-mail (director@bsa.ac.uk) or telephone (+33 210 7210974), or to the Chair of the Crete SubCommittee, Professor Todd Whitelaw (t.whitelaw@ucl.ac.uk).

Application:

Applications should be sent as an email attachment (signed pdf preferred) to the School Administrator, Mrs Tania Gerousi (school.administrator@bsa.ac.uk) by **31st July 2015**.

Applicants are asked to supply the following:-

- A covering letter (of no more than two pages), giving the applicant's contact details, outlining the reasons for applying, giving details of supporting enclosures, and summarising the applicant's principal qualifications for the job;
- A curriculum vitae, giving details of past employment, academic and other qualifications, language skills, other relevant experience;
- A description of the research which the candidate proposes to pursue while in post, detailing timetable and publication plans;

The names, addresses, telephone numbers and email addresses of two academic referees, whom the candidate has contacted in advance and who have agreed to supply letters of reference which they will send to school.administrator@bsa.ac.uk by the closing date

ARCHAEOMETALLURGY MASTER **BURSARIES AT UCL**

The Institute for Archaeo-Metallurgical Studies (IAMS) and the UCL Institute of Archaeology invite applications for two student bursaries for postgraduate studies in archaeometallurgy leading to an MSc degree:

IAMS Bursary in Archaeometallurgy (£5,000)

Ronald F. Tylecote Bursary in Archaeometallurgy (£5,000)

Any candidates accepted for the MSc in the Technology and Analysis of Archaeological Materials are eligible for either bursary, provided that they express a commitment to write a dissertation on an archaeometallurgical topic. Students are welcome to suggest their own dissertation topics at the time of applying, but this is not a requisite.

For more information: <http://www.ucl.ac.uk/archaeology/calendar/articles/2014-15-news/20150624>

Best wishes,

Marcos

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London WC1H 0PY
United Kingdom

Email: m.martinon-torres@ucl.ac.uk

Tel: +44 (0) 2076797496

Web: http://www.ucl.ac.uk/archaeology/people/staff/martinon_torres

ΑΝΑΚΟΙΝΩΣΕΙΣ - ANNOUNCEMENTS

RADIOCARBON 2015, COST-REDUCING MEASURES FOR RC2015 PARTICIPANTS

Dear Colleagues,

The organizing committee is working hard to make the next International Radiocarbon Conference (RC2015) a total success.

We have always kept in mind the financial effort needed to attend the Dakar conference as the airfares may be higher than usual for some of the participants (although, on the other hand, the hotel rates may be lower). Today, we are announcing a few measures that can contribute in reducing the participation cost.

1- Taking into account the support expected from external sources, the committee has decided reduce the conference registration fees (see Table below).

2- We have been discussing with two airline companies regarding special rates.

At this point, we can announce that Air France-KLM Group has agreed to offer special rates to the participants of the RC2015 (**event ID: 25612AF**). The details will be available shortly on the conference web site and through this list.

Discussions with Delta are still pending but an agreement at least for flights originating from New York JFK is within reach, albeit with some requirements.

With these two companies and through code sharing, we expect many participants to benefit from cheaper airline tickets (although, as always, one should check the other options available with their travel agency).

3- The Radiocarbon2012 and Radiocarbon2015 organizing committees will jointly offer a few travel grants for researchers who intend to attend RC2015. The details will be available shortly on the website and through this list.

We look forward to having you all in Dakar come November.

Best regards,

Prof. Oumar Ka

for the Organizing Committee

NEW REGISTRATIONS RATES

	Before 07/30/2015	After 07/30/2015	On-site rates
Regular Participant	400 €	500 €	600 €
Student	250 €	350 €	400 €
Guest	350 €	450 €	500 €

**FINAL CALL FOR SUBMISSIONS - JOHN
EVANS DISSERTATION PRIZE 2015
(ASSOCIATION FOR ENVIRONMENTAL
ARCHAEOLOGY)**

Dear All,

The deadline for the AEA's John Evans dissertation prize is **31 July 2015**. This is just a reminder to say that the prize is open to undergraduate or masters student dissertations from anywhere in the world (details below).

I look forward to receiving your submissions.

Best wishes,

Alex Livarda

JOHN EVANS DISSERTATION PRIZE

John Evans (1941-2005) was an inspirational environmental archaeologist, responsible for advancing the discipline and fostering many of today's top researchers in the field. His many books continue to make a contribution to practical and theoretical aspects of environmental archaeology. To honour the memory of John and his achievements within environmental archaeology, the Association for Environmental Archaeology (AEA) has an annual competition for the best undergraduate and Masters dissertations in any aspect of environmental archaeology.

2015 competition

A choice of prizes of £75 (please note that international students may be liable for the transfer costs) or 3-year membership subscriptions to the AEA will be awarded to the best undergraduate and Masters dissertation, which may be on any aspect of environmental archaeology worldwide. Abstracts from the winning dissertations will be published in the AEA newsletter (this is a condition of entry that all entrants will be agreeing to on submission of their dissertation). The John Evans Dissertation Prize winners will also be encouraged to submit an abridged version of their dissertation for publication in the Association's journal, *Environmental Archaeology*, subject to the usual review process.

We invite each Department of Archaeology (or other relevant department) to submit the dissertation of their best candidate by **31st July 2015**. Submissions from individual students are not accepted. English is the preferred technical language of submission although the committee will also accept submissions in other languages, but these must be accompanied by an English summary (max. 2 pages) to conform to the submission rules. Departments wanting to submit in languages other than English should contact the prize administrator (Dr Alex Livarda) to determine whether the submission can be accommodated.

The results will be announced at the AEA autumn meeting in York, UK, 6-8 November 2015 (<https://www.york.ac.uk/archaeology/news-and-events/events/conferences/aea/>). Please note that only digital copies (pdf) of dissertations will be accepted, and these should be sent to Dr Alex Livarda, who should also be contacted for further information:

Alex Livarda
Department of Archaeology
University of Nottingham
University Park
Nottingham, NG7 2RD
UK
Alexandra.Livarda@nottingham.ac.uk

THE ARCHAEOLOGICAL INSTITUTE OF AMERICA SITE PRESERVATION GRANT FUNDS PROJECTS

The Archaeological Institute of America Site Preservation Grant funds projects that uphold the AIA's mission to preserve and promote the world's archaeological heritage. The goal of the grant, which carries a maximum value of \$25,000 awarded over a period of one to three years, is to maximize global preservation efforts and awareness through AIA support. The AIA targets projects that not only seek to directly preserve archaeological sites, but also emphasize outreach, education, and best practices to positively impact the local community, students, and the discipline of archaeology as a whole.

Please note, applicants must first submit an inquiry form, located on our website (link provided below). If approved, applicants will then be invited to complete a full application, due October 15.

The next deadline for this grant is October 15, 2015.

For more information or to submit an inquiry, please visit our website at <http://archaeological.org/grants/706>.

To learn about past winners, visit our projects page at <http://archaeological.org/sitepreservation/projects>.

Please feel free to contact me if you have any questions!

Best,

Samantha

Samantha Craig
Development Associate
Site Preservation Program Administrator
Archaeological Institute of America
656 Beacon Street
Boston, MA 02215
617.353.9364

ΤΟ ΑΡΧΑΙΟΜΕΤΡΙΚΟ ΠΕΡΙΟΔΙΚΟ AASC ΚΑΙ Η Ε.Α.Ε.

Αγαπητοί Συνάδελφοι,

Όπως είναι γνωστό στους παλαιότερους, η Ελληνική Αρχαιομετρική Εταιρεία (Ε.Α.Ε.) από το 2008 αποτελεί, μαζί με τη Γερμανική και την Ιταλική Αρχαιομετρική Εταιρεία, 'ιδρυτικό σωματείο' του περιοδικού *Archaeological and Anthropological Sciences* (AASC) με διεθνή κυκλοφορία, που εκδίδεται από τον Εκδοτικό Οίκο Springer <http://www.springer.com/earth+sciences+and+geography/journal/12520>.

Το κυριότερο από τα οφέλη που απορρέουν από το καθεστώς αυτό, είναι ότι, βάσει γραπτής συμφωνίας, τα Μέλη της Εταιρείας δικαιούνται σημαντικής έκπτωσης, ως συνδρομητές του περιοδικού, με ετήσιο κόστος 100 €, που περιλαμβάνει αποστολή πέντε (5) εκτυπωμένων τευχών κάθε χρόνο, στα οποία περιέχεται ικανός αριθμός πρωτότυπων δημοσιεύσεων (papers) αρχαιομετρικού ενδιαφέροντος, εγκεκριμένων ύστερα από αξιολόγηση ειδικών επιτροπών κριτών, σύμφωνα με τα διεθνώς ισχύοντα. Επιπροσθέτως, το περιοδικό έχει αναλάβει να δημοσιοποιεί δωρεάν από τις σελίδες του τις αρχαιομετρικές δράσεις της Εταιρείας μας, π.χ. συνέδρια, ειδικές εκδόσεις, νέες διατριβές, βιβλιοκρισίες κλπ. Είναι αυτονόητο, βέβαια, ότι το περιοδικό δέχεται προς αξιολόγηση για δημοσίευση αρχαιομετρικές εργασίες μας <http://www.editorialmanager.com/aasc/> που να αναφέρονται τόσο στις 'Ελληνικές Χώρες' όσο και σε άλλες περιοχές, μάλιστα αρκετές της κατηγορίας αυτής, υπογραφόμενες από Έλληνες ερευνητές, έχουν ήδη δημοσιευθεί.

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Με την επιστολή αυτή απευθύνω θερμές ευχαριστίες και συγχαρητήρια στις δεκάδες συναδέλφους – έμπειρα Μέλη της Ε.Α.Ε. που ανέλαβαν με προθυμία, όποτε χρειάστηκε, μαζί με άλλους συναδέλφους από το εξωτερικό, την υπευθυνότητα της αξιολόγησης πολλών εργασιών που υποβλήθηκαν για δημοσίευση στο περιοδικό. Η ποιότητα και το κύρος της συνεισφοράς τους απετέλεσε αναμφισβήτητο παράγοντα της επιτυχίας στην αξιολόγηση του περιοδικού και είχε έμμεσο αποτέλεσμα τη στενότερη συσχέτισή του με την Ε.Α.Ε.

Τέλος, μια αρχαιομετρική δραστηριότητα που πραγματοποιείται τις προσεχείς ημέρες στην Αθήνα αξίζει να αναφερθεί με την ευκαιρία: Στο πλαίσιο της πολυ-θεματικής συνεδριακής εκδήλωσης με τίτλο *3rd Hellenic Forum for Science, Technology & Innovation, 29/06-03/07/2015* <http://events.demokritos.gr> που θα γίνει στις εγκαταστάσεις του ΕΚΕΦΕ "Δημόκριτος" (Αγ. Παρασκευή) διοργανώνεται, στις

03/07/2015, και μια μικρή συνεδρία, στα αγγλικά, με αντικείμενο την πολιτιστική κληρονομιά (Cultural Heritage and Modern Perspectives). Μολονότι έχει ορισθεί κόστος εγγραφής για τους συνέδρους, (50 € και 30 €) η είσοδος για φοιτητές θα είναι δωρεάν.

Με συναδελφικούς χαιρετισμούς,

Ιωάννης Ε. Μπασιάκος

Εργ. Αρχαιομετρίας, ΕΚΕΦΕ “Δημόκριτος”

Editor-in-Chief, AASC/Springer

SCHOLARSHIPS FOR ADVANCED MASTERS **IN STRUCTURAL ANALYSIS OF** **MONUMENTS AND HISTORICAL** **CONSTRUCTIONS (CALL 3)**

Dear Colleague,

Please find below information about the Advanced Master Course in Structural Analysis of Existing Buildings, Monuments and Historical Constructions (call 3).

I kindly invite you to disseminate this information to anybody who could be interested in applying.

SCHOLARSHIPS FOR THE ADVANCED MASTERS IN STRUCTURAL ANALYSIS OF MONUMENTS AND HISTORICAL CONSTRUCTIONS

Applications for the **Advanced Masters in Structural Analysis of Monuments and Historical Constructions**, approved by the European Commission within the framework of the Erasmus Mundus Programme, are opened up to July 20, 2015 (call 3).

This Master Course is organized by a Consortium of leading European Universities/Research Institutions in the field, composed by **University of Minho** (coordinating institution, Portugal), the **Technical University of Catalonia** (Spain), the **Czech Technical University in Prague** (Czech Republic), the **University of Padua** (Italy) and the **Institute of Theoretical and Applied Mechanics of the Czech Academy of Sciences** (Czech Republic). The course combines the most recent advances in research and development with practical applications.

A number of **scholarships**, ranging from 4,000 to 13,000 Euro, are available to students of any nationality.

The SAHC leaflet can be downloaded at www.msc-sahc.org/upload/docs/Leaflet_low.pdf

Please find full details on the MSc programme, as well as electronic application procedure, on the website www.msc-sahc.org

Yours sincerely,

Paulo B. Lourenco

Course Coordinator

Editor of the International Journal of Architectural Heritage: Conservation, Analysis, and Restoration

IAMS MASTERS BURSARIES AVAILABLE **FOR 2015 ENTRY**

The [Institute for Archaeo-Metallurgical Studies](#) (IAMS) and the UCL Institute of Archaeology invite applications for two student bursaries for postgraduate studies in archaeometallurgy leading to an MSc degree.

Bursaries

- IAMS Bursary in Archaeometallurgy (£5,000)
- Ronald F. Tylecote Bursary in Archaeometallurgy (£5,000)

Application procedure

Any candidates accepted for the [MSc in the Technology and Analysis of Archaeological Materials](#) are eligible for either bursary, provided that they express a commitment to write a dissertation on an archaeometallurgical topic. Students are welcome to suggest their own dissertation topics at the time of applying, but this is not a requisite.

In the personal statement accompanying their application to the MSc, they should include a brief comment expressing their interest in being considered for the above bursaries.

Applications will be assessed based on the academic merit of the applicants and their statements.

- Deadline: 1 August 2015

Any enquiries about the bursaries may be directed to [Marcos Martinon-Torres](#) (m.martinon-torres@ucl.ac.uk)

Enquiries about the [Masters degree programmes offered by the Institute](#) should be directed to the Institute's Graduate Programmes Administrator, [Lisa Daniel](#).

ΝΕΕΣ ΕΚΔΟΣΕΙΣ – NEW PUBLICATIONS

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On the cover: a Roman bronze protome found at the city of Harmanli, SE Bulgaria; see the paper of Ignatov / Dimitrova in this issue; photo Kremena Dimitrova.

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ELAION: BOOK AND DATABASE ON ANCIENT OLIVE OIL PRODUCTION

Tomasz Waliszewski, *Elaion. Olive Oil Production in Roman and Byzantine Syria–Palestine*, [=PAM Monographs 6], Warsaw: PCMA, University of Warsaw Press, 2014

The latest volume published by the Polish Centre of Mediterranean Archaeology, University of Warsaw in the PAM Monograph Series is a comprehensive study on oleoculture in the Roman and Byzantine Syria–Palestine by Prof. Tomasz Waliszewski. The book is accompanied by an online database of over 1700 oil-press related elements, which lay at the basis of the conclusions presented in the book.

Oleoculture was always an important part of ancient agriculture, which was the mainstay of the ancient economy and the writing on the subject, both ancient and modern, is immense. The present study centers upon the place of the olive in the agricultural regimes and economies of Roman and Byzantine Syria–Palestine, exploring them in environmental, technological, social and, when possible, economic contexts.

The author explores the regional origins of olive cultivation and its wanderings across time and space, discussing typology and chronology of oil facilities and their rural and urban contexts, as well as the economics of production and logistics of olive oil distribution.

The book opens with a synthetic presentation of oil production in Roman and Byzantine Syria–Palestine, based for the most part on data, which is gathered and presented in the second part as well as in an online resource, comprising new evidence from Syria, Lebanon and Jordan, as well as an overview of previously available data from Palestine, supplemented with information on the latest discoveries. Prominent among the data from Lebanon are hitherto unpublished records from PCMA excavations in Chhîm and Jiyeh, directed by Tomasz Waliszewski.

Contents (PDF): http://elaion.uw.edu.pl/bundles/app/files/ELAION_contents.pdf
ELAION database: <http://elaion.uw.edu.pl/>

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JOURNAL OF MEDITERRANEAN ARCHAEOLOGY 28.1 (2015)

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EΙΔΗΣΕΙΣ - NEWS RELEASE

MASSIVE TRIUMPHAL MARBLE ARCH BUILT BY ROMANS TO HONOUR EMPEROR TITUS DISCOVERED ARCHAEOLOGISTS IN ROME DISCOVER, AT ONE END OF THE CIRCUS MAXIMUS CHARIOT RACING ARENA, THE FOUNDATIONS OF A HUGE TRIUMPHAL ARCH BUILT FOR THE EMPEROR TITUS, BY NICK SQUIRES

The remains of a triumphal arch built in honour of the Emperor Titus have been unearthed from underneath Rome's Circus Maximus chariot-racing arena.

The arch, which was built immediately after the emperor's death in 81AD, would have formed a magnificent entrance to the Circus Maximus, where charioteers competed against each other in races that were depicted in the 1959 Hollywood epic Ben Hur.

Authorities in Rome now hope to reconstruct the imposing, 17-metre-wide, 15-metre-long marble arch, in a project that would cost at least €1 million (£718,000).

They have already starting building a detailed digital image of what the monument probably looked like, based on their findings.

The remains of the arch were found at a depth of around 10ft below ground at the eastern end of the Circus Maximus, which is located between the Colosseum and the Tiber River.

Its existence had been known only from historical records from the medieval period – it is thought to have disappeared from sight 800 years ago, after its stone was pilfered for other buildings and its foundations sank beneath the ground.

Archaeologists found more than 300 marble fragments of the monument, some of them the size of a small car.

They discovered the bases of the four giant columns that formed the front of the arch, as well as the plinths on which they rested and traces of the original travertine pavement.

Emperors and generals would have passed beneath the huge arch during triumphal processions to celebrate military victories against the enemies of the Roman Empire.

Until the money to reconstruct the arch can be raised, its foundations will be reburied in order to protect them from the elements – a common archaeological practice.

Excavating the remains of the arch was complicated because much of it lay below the water table and the site was prone to flooding, said Claudio Parisi Presicce, a cultural heritage official.

"When the four plinths emerged we realised that there was more down there so we expanded the dig," he said.

If it is to be reconstructed, the first task will be to divert or block the water, the legacy of a system of channels and mills that were built in the area during the medieval period.

The arch is one of two that was built in honour of the emperor, whose full name was Titus Flavius Vespasianus.

The other arch, which is intact and in a state of excellent preservation, stands at the entrance to the Forum, the heart of the Roman Empire.

It commemorates Titus's victory over the Jews of Judaea, who revolted against Roman rule in 66AD, precipitating a war that finally ended with the fall of Masada in 72AD.

A relief that decorates the arch depicts Roman soldiers marching with a great gold menorah, or candelabrum, part of the booty taken from Jerusalem.

Please visit the site:

<http://www.telegraph.co.uk/news/worldnews/europe/italy/11638975/Massive-triumphal-marble-arch-built-by-Romans-to-honour-Emperor-Titus-discovered.html>

IN ANCIENT EGYPT, LIFE WASN'T EASY FOR ELITE PETS ANIMAL SKELETONS FOUND BURIED IN A 5,000-YEAR-OLD CEMETERY REVEAL INJURIES FROM BEATINGS, RESTRAINTS, BY TRACI WATSON

For ancient Egyptians, owning a menagerie of exotic animals conveyed power and wealth. But the remains of baboons, hippos, and other elite pets buried more than 5,000 years ago in a graveyard near the Nile reveal the dark side of being a status symbol.

Baboon skeletons found at one tomb bear dozens of broken hand and foot bones, hinting at punishing beatings. At least two baboons have classic parry fractures, broken arms that typically occur when trying to shield the head from a blow. A hippo calf broke its leg trying to free itself from a tether, and an antelope and a wild cow also show injuries probably related to being tied.

Ancient zookeepers "clearly had difficulty maintaining these animals," says zooarchaeologist Wim Van Neer of the Royal Belgian Institute of Natural Sciences, who led a new analysis of the skeletons to be published in an upcoming issue of the *International Journal of Osteoarchaeology*. "The practical means of keeping animals in captivity were not so sophisticated as nowadays."

The animals were found in the ancient cemetery of Hierakonpolis, a town that thrived long before Egypt became a united kingdom ruled by pharaohs. Excavations have revealed two elephants, a leopard, two crocodiles, and remains of nine more exotic species buried near the tombs of powerful citizens. Nowhere else in Egypt have archaeologists found such an array of ancient zoo animals, which were probably sacrificed after their owners died. (See evidence of possible human sacrifice at Hierakonpolis.)

Pets Make a Statement

Different animals held different meanings for their owners, says Renee Friedman, who is director of the Hierakonpolis Expedition and has received past research support from National Geographic. Elite rulers would have wanted to emulate the strength of an elephant. The hippo, on the other hand, was a terrifying, destructive beast. To keep a hippo "means you're controlling a really chaotic force in nature," she says.

The animals' injuries show signs of healing, suggesting they were kept alive in captivity for several weeks or longer, rather than being killed immediately. Exactly when the animals were injured is not clear, says archaeologist Richard Redding of the University of Michigan's Kelsey Museum, who has studied animal bones excavated in ancient Egypt. Redding argues that the animals' struggles while being caught and subdued could have led to the injuries.

Van Neer agrees that some of the animals may have been hurt while their pursuers tried to nab them. But the 40-plus broken hand and foot bones of the baboons buried in what's known as Tomb 12 are "really too much to be due to capture," Van Neer says. A struggling animal trying to elude a posse of humans would have been more likely to break the long bones of the arms and legs.

He also points out that mummified baboons from a later date show few signs of harsh treatment. Perhaps by then the ancient Egyptians had learned to keep animals without beating and tethering them. Even at Hierakonpolis, baboons buried in tombs that seem to be more recent than Tomb 12 show fewer signs of violence.

"You have to be careful with baboons-they bite, they steal, they're dangerous," Van Neer says. The earliest keepers may have kept the animals in line with beatings, but over the years, perhaps Egyptians "became better as baboon keepers."

Please visit the site: <http://news.nationalgeographic.com/2015/05/150525-ancient-egypt-zoo-pets-hierakonpolis-baboons-archaeology/> [Go there for pix]

ARCHAEOLOGISTS RETURN TO PREHISTORIC SANCTUARIES ON ISLAND OF MENORCA, SPAIN

Site shows human occupation as early as 1500 BCE. Scientists recruit students and volunteers to help. Archaeologists return to prehistoric sanctuaries on island of Menorca, Spain

After nearly 30 years, a team of archaeologists will be returning once again to the site of So na Cacana on the island of Menorca, Balearic Islands, Spain, to renew investigations of a prehistoric sanctuary complex that archaeologists believe represented the remains of the Talaiotic Culture, a prehistoric culture that flourished, particularly on the islands of Majorca and Menorca, during the 1st Millennium BCE.

"Between 1982 and 1987, archaeological excavations made by the Museum of Menorca found two sanctuaries [at So na Cacana] with taula and other buildings, probably religious, where there were only scattered remains half hidden by the vegetation," stated the project principle investigators. The ancient settlement remains are located about six km away from the municipality of Alaior. The site features a tower-like monument resembling a large rectangular talaiot (Bronze Age megalithic structure) at the highest point of the area and possibly dated to before the 10th century B.C., which may contain an inner chamber with chapels; a second, smaller tower or talaiot; two sanctuaries with taula; two talaiotic houses; two hypogea; and several structures not yet excavated. The investigators theorize that the site had a religious purpose.

Beginning June 15, 2015 and running for six months, the site investigators plan to field a team that will explore a number of structures and features in the site area, including a funerary hypogeum dated from the 15th - 8th centuries BCE, an Iron Age sanctuary or taula (6th - 3rd centuries BCE), an Iron Age (6th - 3rd centuries BCE) house structure, a Roman period (2nd - 4th centuries CE) agricultural-related structure, and a 9th - 10th century CE Islamic necropolis.

The team leadership is currently calling on students and volunteers who may be interested in participating in the surveys and excavations, which will entail in-depth training and education. "TANYT (the organization managing the field work) is now responsible for this archaeological site," write the investigators, "and this cultural association aims to develop a field school and experimental camp focused on theoretical and practical training for students and professionals in archaeology and cultural heritage conservation. So the training in the field school includes hands-on intervention in different sectors of the site, each one representing a cultural stage in Menorca prehistory, proto-history and history (Bronze Age, Iron Age, Roman Period and Medieval Period)."

Individuals interested in learning more about the site and how to participate my contact the Asociación Tanyt, Menorca, at tanytac@hotmail.com and can visit the website at <http://sonacassana.jimdo.com/>.

Please visit the site: <http://popular-archaeology.com/issue/spring-2015/article/archaeologists-return-to-prehistoric-sanctuaries-on-island-of-menorca-spain>

MEDICINE’S HIDDEN ROOTS IN AN ANCIENT MANUSCRIPT, BY MARK SCHROPE

The first time Gregory Kessel held the ancient manuscript, its animal-hide pages more than 1,000 years old, it seemed oddly familiar.

A Syriac scholar at Philipps University in Marburg, Germany, Dr. Kessel was sitting in the library of the manuscript’s owner, a wealthy collector of rare scientific material in Baltimore. At that moment, Dr. Kessel realized that just three weeks earlier, in a library at Harvard University, he had seen a single orphaned page that was too similar to these pages to be coincidence.

The manuscript he held contained a hidden translation of an ancient, influential medical text by Galen of Pergamon, a Greco-Roman physician and philosopher who died in 200 A.D. It was missing pages and Dr. Kessel was suddenly convinced one of them was in Boston.

Dr. Kessel’s realization in February 2013 marked the beginning of a global hunt for the other lost leaves, a search that culminated in May with the digitization of the final rediscovered page in Paris.

Scholars are just beginning to pore over the text, the oldest known copy of Galen’s “On the Mixtures and Powers of Simple Drugs.” It may well provide new insights into medicine’s roots and into the spread of this new science across the ancient world.

“On so many levels it’s important,” said Peter Pormann, a Graeco-Arabic expert at the University of Manchester who now leads a study of the text.

The manuscript held by Dr. Kessel that day was a palimpsest: older text covered up by newer writing. It was a common practice centuries ago, a medieval form of recycling. In this case, 11th-century Syrian scribes had scraped away Galen’s medical text and had overwritten hymns on the parchment.

The hymn book itself is of interest, but for now it is the original text, all but invisible to the naked eye and known as the undertext, that has captured the imagination of scholars.

For centuries, Galen’s “Simple Drugs” was required reading for aspiring physicians, the summation of ancient knowledge about medicine, patient care and pharmaceutical plants. Galen described a root that cures “roughness of the throat” and recommended hemp as an earache remedy that “does not produce flatulence” (though it “dries out the semen”).

Much of “Simple Drugs” was eventually translated into Syriac, a form of Aramaic used by Middle Eastern Christian communities. The undertext of the manuscript in Baltimore, most likely from the ninth century A.D., is a copy of the first Syriac translation, itself painstakingly completed in the sixth century A.D. by Sergius of Reshaina, a Syriac physician and priest.

“Today, it doesn’t look to be special when somebody translates one language to another, but in those days, it was indeed a great achievement,” Dr. Kessel said. “He had to create vocabulary, to find Syriac words to correspond to this Greek medical vocabulary.”

By the sixth century, Syriac-speaking Christians were spreading east from Turkey through Syria, Iraq and Iran. They needed translations of Greek scholarly work, partly to support missionary work like running hospitals.

“Simple Drugs” was a large work, an 11-book treatise. Sergius’s translations of Galen’s text were copied and recopied for centuries, and eventually became a bridge for moving the medical expertise of the ancient Greeks to Islamic societies. Syriac texts were much easier than Greek ones to translate into Arabic.

As Muslim influence grew in the Near and Middle East, Christian populations dwindled, and so did Syriac. “These great Christian cultures that used it suffered so much,” said Columba Stewart, the executive director of the Hill Museum and Manuscript Library in Collegeville, Minn.

“By the time you have modern scholarship, these ancient Syriac cultures are just a vestige of their former selves — often quite isolated from Western culture, so there’s not a lot of awareness.”

Revealing Reading

Little is known of the history of the manuscript in Baltimore, formally known as the Syriac Galen Palimpsest, from its recycling in the 11th century until the 1920s, when it was sold to a private collector in Germany. After that, the manuscript fell again from public view until 2002, when it was purchased by a collector in a private sale. He has not been publicly identified.

In 2009, the Galen Palimpsest was lent to the Walters Art Museum for spectral imaging of its leaves by an independent group of specialists, which would reveal the erased Galen undertext. Each page is photographed digitally at extremely high resolution with varying colors and configurations of light, which in various ways illuminate the inks, grooves from writing and parchment itself. Computer algorithms exploit these variations to maximize the visibility of the undertext.

The resulting images went online under a “creative commons” license, meaning that anyone can use the material free for any noncommercial purpose. Once the images were online, William Noel, who was the curator of manuscripts and rare books at the museum, began organizing members of the tiny community of scholars who study Syriac scientific texts to study the new material.

One of them was Dr. Kessel, who was on a fellowship at Harvard’s Dumbarton Oaks Research Library in Washington. Eventually, Michael B. Toth, a systems engineer who managed the imaging work arranged for him to see the Galen Palimpsest for himself.

“I couldn’t even imagine how it looked,” Dr. Kessel said. “Then when I saw the manuscript, I had the kind of déjà vu impression that I had already seen it. And then I recalled the single folio in the Harvard library.”

Filling the Gaps

By analyzing the page size, handwriting and other features, as well as the visible text, Dr. Kessel was able to determine that the Harvard leaf did indeed fill one of the gaps in the Galen Palimpsest. But six more were apparently missing. Dr. Kessel set out to find them.

He began with a list of 10 libraries known to have ancient Syriac material, combing through online catalogs when available to look for clues such as the right dimensions or vague references to undertext. Sometimes, he traveled to the libraries himself.

It was not long before Dr. Kessel had good news. He found one missing page in a catalog from the Sacred and Imperial Monastery of the God-Trodden Mount of Sinai. It is known more commonly as St. Catherine’s in the Sinai Desert in Egypt, which has the world’s oldest continuously operating library.

Another leaf turned up at the National Library of France in Paris. And at the Vatican’s vast library in Rome, he was able to identify the other three missing leaves, bringing the total to six. The seventh missing page is believed to have been blank and was probably discarded.

An Intriguing Link

No one knew how much of “Simple Drugs” might be hidden in the Galen Palimpsest. The only other known Syriac copy resides at the British Library in London and includes only Books 6 to 8. Translations of these later books in the series are the most common, because they contain more specific medicinal information and details about the properties of plants.

But as their preliminary studies progressed, Dr. Kessel and his colleagues spotted words from Books 2 and 4 in one of the loose leaves. The full text of “Simple Drugs” is known to scholars, but only from more recent translations in languages other than Syriac.

“This was something absolutely unexpected,” he said.

Siam Bhayro, a specialist in early Jewish studies at the University of Exeter in England, had believed that Sergius must have translated the earlier books, but there had been no proof. When he heard that Dr. Kessel might have found pages from the early translations, “I was almost dancing up and down,” he said.

Another of Dr. Kessel’s intriguing discoveries was a note in Arabic on the first leaf, indicating that the manuscript — by then a hymn book concealing Galen’s text — had been donated to the brothers of the Sinai monastery, a reference to St. Catherine’s.

How it left the monastery is unclear: Particularly in the early 20th century, some of the library’s holdings were borrowed legitimately, while others were stolen by visitors hoping to make private sales.

The independent imaging team is now finishing the work necessary to add the rediscovered leaves to the digital collection. But translating and studying the Syriac text revealed in the images will take much longer, perhaps five years or more. That work is now underway because of a recent \$1.5 million grant from the United Kingdom's Arts and Humanities Research Council.

Scholars are eager to compare the Syriac material to existing copies of "Simple Drugs" written in Greek, all of which appear to be centuries younger than the Galen Palimpsest and much further removed from the original.

As texts went through multiple rounds of copying, they underwent significant changes. A scribe might remove parts that seemed unimportant or add material based on new knowledge. Comparing the Galen Palimpsest and the British Syriac copy, for instance, could offer telling insights into how the ancient Greeks treated the ill and how these remedies spread across the Middle East.

"Some of the stuff is not entirely scientific by our standards," even if it enabled progress, Dr. Petit said. Indeed, little of Galen's advice would stand up to modern scrutiny. Like other ancient physicians, he believed health was controlled by the balance of four "humors" in the body and recommended certain stones for their cleansing powers.

"The Galenic system is completely bonkers," Dr. Bhayro said.

Still, it was the best thinking available in an era in which the very idea of medical science was relatively new.

"It's likely to be a central text once it's fully deciphered," said Dr. Pormann of the University of Manchester. "We might discover things we really can't dream of yet."

Please visit the site: <http://www.nytimes.com/2015/06/02/science/medicines-hidden-roots-in-an-ancient-manuscript.html>

JORDAN'S BLACK DESERT MAY HOLD KEY TO EARTH'S FIRST FARMERS

A team of archaeologists in Jordan who have been working for a few years in the Black Desert has made a discovery that could shed light on how early humans made the leap to agriculture.

The team found 14,000-year-old evidence that could lead to a new understanding of culture and the environment at the dawn of human civilization in the region. At that time, this area used to get much more rain and was able to sustain human settlement.

"It's really startling new evidence that we didn't expect to find in this particular part of southwest Asia. And it changes the way in which we think about these hunter-gatherer communities at the end of the last ice age, who were on the brink of developing these new technologies of agriculture, these new ways of life that are influencing us still today," says archeologist Tobias Richter from the University of Copenhagen.

Underneath the volcanic basalt on the windswept, arid and rocky plain, within sight of the Syrian border, the bones of a child and adult are slowly coming to the surface after at least 14,000 years entombed in the desert.

By analysing bones, seeds and other remains scientists hope to discover that in this area, 14,000 years ago, humans began farming, settling and forming large social groups.

"We can then identify different species of plants, which in turn will tell us what sorts of things were growing out here. It's hard to imagine right now because it's all desert, but back many, many years ago, it was actually really nice and very, very green, and we can tell that from these plant remains," says finds co-ordinator Erin Estrup.

The team hopes that further discoveries in the desert will help them to build a clearer picture of how the environment and climate changed over time, and the impact this had on the development of human civilization in the area.

Please visit the site: <http://www.euronews.com/2015/06/08/jordan-s-black-desert-may-hold-key-to-earth-s-first-farmers/>

6 'UNIQUE' TOMBS DISCOVERED WEST OF ASWAN

Six ancient Egyptian tombs dating back to the Late Period (664B.C.-332 B.C.) have been discovered in the ancient cemetery west of Aswan, Minister of Antiquities Mamdouh el-Damaty announced in a statements Sunday.

The tomb revealed a group of mummies found inside stone and wooden sarcophagi, fiancé statues representing the four sons of God Horus along with a number of amulets and small wooden statues of Horus, said the statement.

Part of a crown with two blimes symbolizing God Amon Re.Photo courtesy of the Antiquities MinistryPart of a crown with two blimes symbolizing God Amon Re.Photo courtesy of the Antiquities Ministry

"This discovery is extremely unique because it is the first Late Period discovery at the Ancient Cemetery in Aswan. The previously discovered tombs at this area date back to the Old, Middle and New Kingdoms," Damaty said.

The discovery was made in the area of Koba el-Hawa, where there are several tombs for the rulers of Aswan during the Middle Kingdom of Egypt in the period between 2000-1700 B.C.

Director of Aswan and Nubia archaeological areas Nasr Salama said that most of the discovered tombs are to be accessed through flight of steps leading to the tomb's main entrance.

"Each tomb is divided into three to four rooms with no inscriptions as the technique used in digging the newly discovered tombs is completely different from the tombs of the same area" he added.

The area of the newly discovered tomb, which includes other tombs for some governors in Upper Egypt during the Middle and Old Kingdom of Egypt, was called Ta Si and its capital was the island of Abu, known in Greek as Elephantine.

This area includes a number of exceptional tombs, such as the tomb of King Horekhof also known as the only ruler that documented his autobiography, works, and voyages on the walls of his tomb. There is also the tomb of King Hakanb I whose temple was discovered by Egyptian archaeologist Labib Habashi behind the Museum of Aswan in the beginning of the 20th century.

Please visit the site: <http://www.thecairopost.com/news/154387/news/6-unique-tombs-discovered-west-of-aswan-antiquities-minister> [Go there for pix]

TEAM EXPLORING LIFE AND DEATH IN ANCIENT EGYPT, BY ANDREA HAHN

Archaeologists have been digging in Egypt for more than 200 years, seeking to learn more about the ancient culture famous for pyramids, hieroglyphs and mummification. Even so, secrets remain buried and the mystery remains, beckoning archaeologists to the desert country again and again.

Gretchen Dabbs, a bio-archaeologist at Southern Illinois University Carbondale, heeds the call with the help of a \$253,817 grant from the National Endowment for the Humanities for a research project called "Death and the City: Towards an Integrated Narrative of Life and Death in Ancient Egypt."

Dabbs is the co-director, with Anna Stevens of the Amarna Project, of a collaborative project that focuses on the North Tombs Cemeteries at Amarna. The project involves several trips to Egypt, for digging, for analyzing, and then for writing.

Amarna is a well-known site for ancient Egyptian history. Excavations at the site, and attempts to preserve it, are on-going and involve teams of archaeologists from all over the world. In its heyday, it was known as the city Akhetaten. One of the most famous pharaohs of them all, the "heretic" Akhenaten, father of Tutankhamen, the boy-king, and husband to Nefertiti, whose images have become almost synonymous with ancient Egypt in modern popular culture, founded the city in approximately 1350 BC.

The site at Amarna is crucial to understanding what archaeologists and historians call the "Amarna Period." Akhenaten seems to have undergone some sort of religious (or arguably political) conversion in the fifth year of his reign. He deviated from the religious traditions of his times and instituted the worship of Aten, a solar deity. He abolished the traditional polytheistic religion of Egypt at the state level, and established the first known monotheistic state with his insistence on the worship of Aten as the only god. During that time, he moved the capital of Egypt from Thebes to Akhetaten, known today as Amarna. According to the Ancient History Encyclopedia, to use an easily accessed source, the Amarna Period is one of the most studied and debated periods in all of ancient Egyptian history.

Another level of significance at the site is that it includes an entire city - temples and tombs, bakeries and grain silos, common homes and public buildings. Decorated boundary markers known as stele tell us the ancient city limits, which included fields and suburbs nearby, and the North Tombs Cemetery.

The north end of the site includes the North Suburb, which was home to an ancient middle-class, including merchants, and the Palace of Nefertiti, a self-contained residence with gardens, solar altars, and painted walls.

The North Tombs are six decorated tombs made of rock and belonging to some of the highest officials of Akhenaten's court. They are separate from the city proper, and lay at the base of a cliff but on top of a slope. A dry-river bed known as a wadi separates the tombs into two groups. The site also includes a number of smaller, unfinished tombs.

Dabbs' team will study graves that are essentially pit burials, and were likely used for people with less social standing. Dabbs said for these simple burials, most individuals are wrapped in linen, while some are enclosed in a mat of woven sticks, sometimes with pieces of pottery.

Dabbs' team focuses on bio-archaeology, which is the study of bones and other biological materials found at an archaeological site. The NEH funded excavations will run for three years (2015-2017). The first excavation season was March 25 to May 8 of this year, and the team excavated 115 individuals during that season. In addition to Dabbs, with her specialization in bone analysis, the team includes several archaeologists interested in the mortuary landscape, an archaeo-botanist, pottery expert, and experts in plotting the spatial organization and patterns of ancient Egypt.

Dabbs has worked in Egypt before - in fact, she's worked at Amarna. She was part of a South Tombs excavation team that included Jerry Rose from the University of Arkansas and Anna Stevens, co-director of the current project. The North Tombs expedition will share a few traits in common, including a field school where students will learn by participating in every step of the bioarchaeological analysis, from cleaning the bones with tooth brushes through skeletal analysis, all the way to writing burial descriptions and entering data into a database for future analysis.

Dabbs explained that some field schools fit students almost exclusively into their preferred areas of specialization. While this gives students an immersive experience in a focused area of archaeology, it's not in keeping with the broader base of knowledge Dabbs wants her students to have.

Dabbs wants the students in the field school to appreciate the work of other specialists, she said, and to see how their own specialization contributes to the overall picture - something that doesn't always happen with a narrow focus.

"It's difficult in Egypt," she said. "We are all digging in sand, and because of that, there are no sidewalls. It takes a lot of skill. On the other hand, it is easy to sift for artifacts and fragments."

During the analysis phase, students pair up to work with a skeleton. Cleaning the skeleton or skeletal remains is of paramount importance, Dabbs said, emphasizing that the work is meticulous and painstaking. If students discover something unusual as they clean, they flag the find with a small piece of tape. Later, in what Dabbs called the Grand Rounds, all the students discuss all the work - including the flagged items. Sometimes the "find" is merely a slight but common variation, and sometimes solving the mystery takes more analysis. Either way, the students see a wide variety of examples, which better helps them to identify variations and to recognize normal ranges.

The analysis helps the bio-archaeologists estimate the age, sex and stature of the people whose skeletons are under examination. If teeth are available, the bio-archaeologists can more easily learn about the nutritional health of the person than they can from bones alone.

Students also learn to use x-rays and to develop x-ray film, and they participate in written and photographed descriptions of the burial sites. These descriptions become part of the Amarna database and will benefit future scholars.

Two doctoral students from SIU are part of the team: Lindsey Roberts and Jessica Spencer. Roberts earned her bachelor's degrees in biology and Spanish from the University of Kentucky. Her master's degree is from SIU. Her master's degree thesis, focused on the effects of freezing on soft tissue decomposition, won SIU's Outstanding Thesis award. Roberts has previous dig experience at the Mead Site and the Gerstle River Site in Alaska. At Amarna, she hopes to further her research into biodistance relationships using a variety of methodologies to answer questions about the cemeteries: are they structured according to kin-groups, or is biological relatedness not a factor in Ancient Egyptian cemeteries?

"This is my first time in Egypt," she said. "I am very excited to analyze the skeletons excavated during the dig season. What will we find?!"

Spencer earned a baccalaureate degree from Oregon State University and a master's degree in forensic anthropology from the University of Montana. For her dissertation research, she's studying a late Roman-early Byzantine skeletal collection from Jordan. She held an internship in Hawaii with the Joint POW/MIA Accounting Command Central Identification Laboratory (better known as JPAC-CIL), where she worked with unidentified American soldiers' remains from the Korean War.

Please visit the site: <http://news.siu.edu/2015/06/060315amh15072.php>

THE BIRTH OF MODERN EURASIA BEGAN 5,000 YEARS AGO

Was it mass migration, or rather a circulation of ideas that laid the foundation for the demographic map of Europe and Central Asia that we see today? The Bronze Age (about 5,000 – 3,000 years ago) was a period with large cultural upheavals. But just how these upheavals came to be have remained a mystery.

Assistant Professor Morten Allentoft from the Centre for GeoGenetics at the Natural History Museum of Denmark, University of Copenhagen is a geneticist and is first author on the paper in [*Nature*](#), explains:

“Both archaeologists and linguists have had theories about how cultures and languages have spread in our part of the world. We geneticists have now collaborated with them to publish an explanation based on a record amount of DNA-analyses of skeletons from the Bronze Age.”

Two camps

So far the archaeologists have been divided into two camps. Professor Kristian Kristiansen of the University of Gothenburg, who initiated the project together with Lundbeck Foundation Professor Eske Willerslev says:

“The driving force in our study was to understand the big economical and social changes that happened at the beginning of the third millennium BC, spanning the Urals to Scandinavia. The old Neolithic farming cultures were replaced by a completely new perception of family, property and person-hood. I and other archaeologists share the opinion that these changes came about as a result of massive migrations.”

With this new investigation the researchers confirm that the changes came about as a result of migrations. The researchers think that this is interesting also because later developments in the Bronze Age are a continuation of this new social perception. Things add up because the migrations can also explain the origin of the northern European language families. Both language and genetics have been with us all the way up to the present.

One of the main findings from the study is how these migrations resulted in huge changes to the European gene-pool, in particular conferring a large degree of admixture on the present populations. Genetically speaking, ancient Europeans from after these migrations are much more similar to modern Europeans than those prior to the Bronze Age.

Mobile warrior people

The re-writing of the genetic map began in the early Bronze Age, about 5,000 years ago. From the steppes in the Caucasus, the Yamnaya Culture migrated principally westward into North- and Central Europe, and to a lesser degree, into western Siberia. Yamnaya was characterized by a new system of family and property. In northern Europe the Yamnaya mixed with the Neolithic people who inhabited this region. Genetically speaking their DNA resembles present day Europeans living north of the Alps today.

Later, about 4,000 years ago the Sintashta Culture evolved in the Caucasus. This culture’s sophisticated new weapons and chariots were rapidly expanding across Europe.

The area east of the Urals and far into Central Asia was colonized around 3,800 years ago by the Andronovo Culture. The researchers' investigation shows that this culture had a European DNA-background.

During the last part of the Bronze Age, and at the beginning of the Iron Age, East Asian peoples arrived in Central Asia. Here it is not genetic admixture we see, but rather a replacement of genes. The European genes in the area disappear.

A new scale

These new results derive from DNA-analyses of skeletons excavated across large areas of Europe and Central Asia, thus enabling these crucial glimpses into the dynamics of the Bronze Age. In addition to the population movement insights, the data also held other surprises. For example, contrary to the research team's expectations, the data revealed that lactose tolerance rose to high frequency in Europeans, in comparison to prior belief that it evolved earlier in time (5,000 – 7,000 years ago). Co-author and Associate Professor Martin Sikora from the Centre for GeoGenetics says:

“Previously the common belief was that lactose tolerance developed in the Balkans or in the Middle East in connection with the introduction of farming during the Neolithic. But now we can see that even late in the Bronze Age the mutation that gives rise to the tolerance is rare in Europe. We think that it may have been introduced into Europe with the Yamnaya herders from Caucasus but that the selection that has made most Europeans lactose tolerant has happened at a much later time.”

The paper in *Nature* not only gives us a new glimpse into the Bronze Age. It is also the first time an actual population evolutionary study back in time has been made to this extent. Geneticist and director of the Centre for GeoGenetics Eske Willerslev elaborates:

“Our study is the first real large-scale population genomic study ever undertaken on ancient individuals. We analysed genome sequence data from 101 past individuals. This is more than a doubling of the number of genomic sequenced individuals of pre-historic man generated to date. The study is without comparison to anything previously made. The results show that the genetic composition and distribution of peoples in Europe and Asia today is a surprisingly late phenomenon – only a few thousand years old.”

Please visit the site:

[http://www.pasthorizonspr.com/index.php/archives/06/2015/the-birth-of-modern-
eurasia-began-5000-years-ago](http://www.pasthorizonspr.com/index.php/archives/06/2015/the-birth-of-modern-eurasia-began-5000-years-ago)

THE 6,000-YEAR-OLD CROWN FOUND IN A DEAD SEA CAVE, BY APRIL HOLLOWAY

The oldest known crown in the world, which was famously discovered in 1961 as part of the Nahal Mishmar Hoard, along with numerous other treasured artifacts, dates back to the Copper Age between 4000-3500 B.C.

It was revealed in New York University's Institute for the Study of the Ancient World as part of the "Masters of Fire: Copper Age Art from Israel" exhibit earlier this year.

The ancient crown is just one out of more than 400 artifacts that were recovered in a cave in the Judean Desert near the Dead Sea more than half a century ago. The crown is shaped like a thick ring and features vultures and doors protruding from the top. It is believed that it played a part in burial ceremonies for people of importance at the time.

The crown is shaped like a thick ring and features vultures and doors protruding from the top.

New York University wrote: "An object of enormous power and prestige, the blackened, raggedly cast copper crown from the Nahal Mishmar Hoard greets the visitor to Masters of Fire. The enigmatic protuberances along its rim of vultures and building façades with squarish apertures, and its cylindrical shape, suggest links to the burial practices of the time."

The Nahal Mishmar Hoard was found by archaeologist Pessah Bar-Adon hidden in a natural crevice and wrapped in a straw mat in a cave on the northern side of Nahal Mishmar, which became known as the "Cave of Treasures." The 442 prized artifacts made from copper, bronze, ivory, and stone, include 240 mace heads, 100 scepters, 5 crowns, powder horns, tools, and weapons.

Some of these objects are like nothing ever seen anywhere else. The round knobs are usually said to be mace heads, but there is no evidence that any of them were ever used in combat.

Carbon-14 dating of the reed mat in which the objects were wrapped suggests that it dates to at least 3500 B.C. It was in this period that the use of copper became widespread throughout the Levant, attesting to considerable technological developments that parallel major social advances in the region.

Some of these objects are like nothing ever seen anywhere else. The round knobs are usually said to be mace heads, but there is no evidence that any of them were ever used in combat. The remaining objects are even more unusual and unique in style, such as the bronze scepter depicted below.

The objects in the Nahal Mishmar Hoard appear to have been hurriedly collected, leading to the suggestions that the artifacts were the sacred treasures belonging to the abandoned Chalcolithic Temple of Ein Gedi, some 7.5 miles (12 kilometers away), which may have been hidden in the cave during a time of emergency.

Daniel Master, professor of archaeology at Wheaton College and a member of the curatorial team, said: "The fascinating thing about this period is that a burst of innovation defined the technologies of the ancient world for thousands of years."

Jennifer Chi, ISAW Exhibitions Director and Chief Curator, added: "To the modern eye, it's stunning to see how these groups of people, already mastering so many new social systems and technologies, still had the ability to create objects of enduring artistic interest."

The purpose and origin of the hoard remains a mystery.

Please visit the site: <http://www.theepochtimes.com/n3/1384068-the-6000-year-old-crown-found-in-a-dead-sea-cave/> [Go there for pix]

WHAT'S OLD IS NEW AGAIN,
REVOLUTIONARY NEW METHODS FOR
EXTRACTING, PURIFYING, AND
SEQUENCING EVER-MORE-ANCIENT DNA
HAVE OPENED AN UNPRECEDENTED
WINDOW INTO THE HISTORY OF LIFE ON
EARTH, BY BOB GRANT

Two researchers sit hunched in front of a fume hood dressed head-to-toe in stark white Tyvek suits, though the yellow-tinted window I'm viewing them through lends the entire scene a sulfurous hue. One of the scientists, a research associate named Hongjie Li, pipettes tiny volumes of solutions containing decades-old DNA into centrifuge tubes, while the other, PhD student Lu Yao, types information into a laptop. Airlock doors and a sensitive ventilation system minimize the incursion of outside air and the myriad bits of contaminating DNA it carries. Yao, reaching a point when she can take a break, looks up from her work and waves, a smile spreading beneath her face mask and crinkling the corners of her eyes.

This is the ancient-DNA lab at the University of Illinois, Urbana-Champaign, tucked in a corner of the basement at the Carl R. Woese Institute for Genomic Biology. Yao has spent hours in this space. Working under the guidance of molecular anthropologist Ripan Malhi, she hopes to answer questions about phylogeny, biogeography, and island dwarfism among long-tailed macaques (*Macaca fascicularis*) in Southeast Asia by sequencing decades- and even century-old mitochondrial DNA collected from the dried skulls of monkeys in museum collections. And thanks to recent methodological, computational, and conceptual advances in the study of ancient DNA, Yao, Li-who studies ancient DNA from native Californians-and other researchers are succeeding, compiling sequences at an unprecedented rate.

In just a few decades, the study of ancient DNA has gone from a scientific curiosity to an extremely powerful method for reconstructing past biological phenomena. Malhi recalls that in his own PhD research, which he finished in 2001, he devoted an entire dissertation chapter and a year of lab work to the genetic analysis of 40 ancient samples from Native Americans, zeroing in on a 300-base-pair-long fragment of mitochondrial DNA. "Now, that's something that one of my students can do in a month," he says. "It's pretty amazing."

In addition to greatly condensing the amount of time it takes to extract and sequence old DNA, new techniques are allowing researchers to pluck sequenceable fragments from ever-more-ancient samples, providing genetic blueprints from long-forgotten epochs of evolution, migration, and ancestry. In 2014 alone, scientists successfully sequenced the mitochondrial genome of a hominin that lived more than 400,000 years ago,¹ exomes from the bones of two Neanderthal individuals more than 40,000 years old,² and a nearly complete nuclear genome from a 45,000-year-old modern human fossil,³ to name but a few. In 2013, an international team of researchers led by scientists at the University of

Copenhagen published the full genome sequence of an ancestral horse species that roamed the Middle Pleistocene permafrost of North America more than 700,000 years ago—the oldest complete genome sequenced thus far.⁴

For ancient-DNA researchers, these truly are heady times. "The last two or three years have been amazing," says Mattias Jakobsson, a population geneticist at Uppsala University in Sweden who studies ancient DNA as a way to understand human evolutionary history. And the coming years only promise more sequences from more and older specimens, he adds. "We're certainly heading to much more data. There's going to be many more studies of many more individuals."

Please visit the site: <http://mobile.the-scientist.com/article/43069/what-s-old-is-new-again> [Go there for full article and pix]

UPPER PALAEOLITHIC TOOLMAKERS ACHIEVED A DIVISION OF LABOUR

Thousands of stone tools from the early Upper Palaeolithic, unearthed from a cave in Jordan, reveal clues about how humans may have started organising into more complex social groups by planning tasks and specialising in different technical skills.

The Journal of Human Evolution published a study of the artefacts from Mughr el-Hamamah, or Cave of the Doves, led by Emory University anthropologists Liv Nilsson Stutz and Aaron Jonas Stutz.

"We have achieved remarkably accurate estimates of 40,000 to 45,000 years ago for the earliest Upper Palaeolithic stone tools in the Near East," Aaron Stutz says. "Our findings confirm that the Upper Palaeolithic began in the region no later than 42,000 years ago, and likely at least 44,600 years ago."

The rich array of artefacts shows a mix of techniques for making points, blades, scrapers and cutting flakes. "These toolmakers appear to have achieved a division of labour that may have been part of an emerging pattern of more organised social structures," Stutz says.

Greater social division of labour

The theory that greater social division of labour was important at this prehistoric juncture was first put forward by anthropologists Steven Kuhn and Mary Stiner.

"Our work really seems to support that idea," Stutz says. "The finds from Mughr el-Hamamah give us a new window onto a transitional time, on the cusp of modern human cultural behaviours, bridging the Middle and Upper Palaeolithic."

This pivotal time also marked the ebbing of Neanderthals as a last wave of anatomically modern humans spread out from Africa and into the Near East. This region, also known as the Levant, comprises the eastern Mediterranean at the crossroads of western Asia and northeast Africa. As the final surge of modern humans passed through the Levant, they would likely have encountered human populations that arrived earlier, and they may also have interbred with Neanderthals.

Levantine corridor

"Our find sits right in the Levantine corridor, midway between the Dead Sea and the Sea of Galilee, where each generation expanding into Eurasia would have foraged for food and made campsites," Stutz says. "We don't know if these toolmakers were mainly Neanderthals or anatomically modern humans, but recent evidence from other studies now raises the possibility that they were a mix of different populations. What we see at the Mughr el-Hamamah site is that individuals were starting to live, work and form families in larger, more culturally structured social networks."

Mughr el-Hamamah is located in a limestone outcrop 240 feet above sea level. It overlooks the Jordan Valley, opposite the Nablus Mountains in the West Bank. The Stutzes, a husband-and-wife team, led excavations of the cave in 2010, funded by a grant from the National Science Foundation.

The relatively undisturbed Upper Palaeolithic layer included fireplaces stacked atop one another that yielded chunks of well-preserved charcoal from hearths associated with the tools. Co-authors Jeff Pigati of the U.S. Geological Survey and Jim Wilson of Aeon Laboratories derived radiocarbon dates for the charcoal specimens, using advanced techniques that minimized the chances of contamination.

The cave is about 30-feet deep with an entrance about 20-feet wide. "We can speculate that several families shared the space and worked alongside one another," Aaron Stutz says. "We found burned animal bones, so they were likely roasting meat, and perhaps boiling plants in hides suspended over their fires as they sat nearby making tools. From the mouth of the cave, they would have had a commanding view of what was likely wetlands and open-vegetation terrain. They could see approaching visitors and deer and gazelle wandering in the distance. If their kids were playing outside, they might also be watching for leopards or other predators."

Prolific output of tools

Toolmaking was a major activity of the group, as evidenced by their prolific output. Co-author John Shea, an anthropologist from Stony Brook University and an expert flint knapper himself, is continuing to analyse the thousands of implements they left behind.

Many discoveries of Near Eastern tool assemblages dating prior to the early Upper Palaeolithic show that humans focused on just one technology. The tools tend to look similar and likely served many uses - the Stone Age version of a Swiss Army Knife. "It takes a good bit of cleverness to be able to devise a tool that helps you cover lots of different situations," Stutz says. "And it makes sense in a context where you don't necessarily know what you're going to need your piece of flint for that day."

The group of toolmakers at Mughr el-Hamamah, however, used different technologies to get different tools. "They were investing in the kinds of activities that require maintaining relationships and group planning," Stutz says. "They were gearing up for a clearly defined division of labour, including firewood gathering, plant gathering, hunting and food foraging."

They produced large quantities of blades for knives, and for hafting onto spears, using a prismatic blade technique that yields long, narrow points that are nearly identical. "This standardization minimizes waste of the rock while maximizing the end product," Stutz says. "It's the conceptual forerunner to assembly-line production."

Group cohesiveness

Through this method, the toolmakers could have efficiently produced the armature for multiple hunters going out on a lengthy foray, increasing the chances for finding and striking a target, he says.

"It would have been socially advantageous for individuals to give blades that they made to others, to entice them to stay together as a group," he adds. "That kind of reciprocity builds relationships. And the stronger the connectivity of your social networks, the greater chance of increasing the number of calories and the quality of nutrients for the group."

Artefacts from the cave also included scraping tools, made on thick blades for hafting onto a handle and likely used for working wood and animal hides.

Other tools continued to be crafted with what is known as the Levallois technique, which was more often used to make the multi-use flakes and triangular points so common in earlier periods.

Even more surprising, Shea's analysis identified hundreds of basic flakes made from the oldest, easiest Stone Age technology of striking a rock that the toolmaker balances on a stone anvil. These tiny, sharp flakes may have served almost like disposable cutlery - handy implements that could be grabbed for a variety of purposes and tossed aside when no longer needed, Stutz says.

It is not yet known if the few fragments of human bones found at Mughr el-Hamamah have left enough intact fragments of DNA for any genetic analysis. But the diverse tool technologies, in use throughout the occupation period of the cave, support the theory of hunter-gatherer populations starting to band together in larger, more interconnected social networks.

As humans began to dominate the landscape, the researchers theorize, they reached a population density threshold for living in larger groups and gained access to a range of technologies. That process may have helped tip the balance for the rise of modern human culture and the disappearance of the Neanderthals.

"Our findings positively show that the cultural changes associated with Neanderthal extinction in the Near East and wider western Eurasia really are more complex than many leading researchers have assumed," Stutz says. "Instead of looking for a smoking-gun technology or climatic fluctuation or volcanic eruption, it's clear we need to look at interconnected behavioural, population and ecological processes. That approach might reveal more clearly the similarities, as well as differences, between our mainly African, and slightly Neanderthal, biological inheritance."

Please visit the site:

<http://www.pasthorizonspr.com/index.php/archives/06/2015/upper-palaeolithic-toolmakers-achieved-a-division-of-labour>

NEW STUDIES ON KEY NEAR EASTERN COPPER MINES TELL DIFFERENT STORIES ABOUT ROLE OF ANCIENT EGYPTIANS

The barren, desolate Timna Valley in modern southern Israel is one of the areas where archaeology first exposed the world of ancient mining and metallurgy. Here, archaeological remains dating to the late second millennium BCE were widely regarded as evidence of the copper mining exploitation managed by ancient Egypt, the empire that ruled the Levant at that time. Not only Timna did become a perfect case of a desert peripheral region ruthlessly exploited by an ancient Near Eastern superpower, but it eventually came to be regarded an archetypal Egyptian mining centre supervised by Egyptian stewards and even featuring an Egyptian temple.

Archaeological excavations in Timna in the last decade and studies on its material culture are revealing a more complex picture. Two new key studies, carried out by archaeologists Tali Erickson-Gini and Uzi Avner, present conflicting interpretations on the chronology of Timna and the role of the ancient Egyptians. These studies were revealed in a symposium on archaeology in the W. F. Albright Institute of Archaeological Research, Jerusalem, in December 2010, and they are now published in the book *Unearthing the Wilderness: Studies on the History and Archaeology of the Negev and Edom in the Iron Age*, edited by Juan Manuel Tebes. This book intends to become a standard reference for the archaeology of the arid margins of the Levant in the Late Bronze and Iron Ages.

The local nomads: subjects or partners?

Between 1959 and 1990 an interdisciplinary group of archaeologists, historians and archaeometallurgists, led by University College London Prof. Beno Rothenberg, exposed in Timna the remains of copper mines, smelting camps and cultic places dated from the Chalcolithic period on. The period that attracted most attention was the 13th-12th centuries BCE, when according to Rothenberg the New Kingdom Egyptians traveled seasonally to manage the extraction and work of the copper done by the local nomadic tribes.

At first, Rothenberg's conclusions were highly controversial. Before Rothenberg's excavations, the Timna mines were considered to be of 10th century BCE date. Nelson Glueck, the doyen of desert archaeology at that time, thought these were "King Solomon's mines", interpreting the archaeological evidence under the light of some controversial biblical texts. But in 1969 Rothenberg discovered the remains of a small shrine – which he called "temple" – of the Egyptian goddess Hathor, full of Egyptian objects dating to the 13th-12th centuries BCE. The Solomonic myth was over. Following Rothenberg's pioneering work, a new paradigm emerged, one in which the New Kingdom Egyptians, and not Solomon's Israelites, were the true masters of the local copper mines.

This interpretation is now contested by archaeologist Uzi Avner, from the Dead Sea-‘Arava Science Center and the ‘Arava Institute for Environmental Studies (Israel), who in 1984 conducted a preservation-restoration project in Timna Site 2 and in the shrine of

Hathor and presented the results in the article “Egyptian Timna – Reconsidered”. In the shrine of Hathor he did three small probes to check Rothenberg’s stratigraphy. What he discovered, he asserts, contradicts the traditional interpretation of the sanctuary.

“The widely published archaeological-historical picture of the ancient copper production was actually incorrect, even misleading”, says confidently Dr. Avner. His own research in the shrine of Hathor led him to suggest a different model of the relationship between the Egyptians, the local tribes, and the Timna environment. “I started with discussing the various publications on the ‘Egyptian Temple’ at Timna”, he asserts, “showing a long list of inner contradictions between different publications (14 altogether), both in data and interpretation. The first conclusion was that the stratigraphy and history of the site, as presented by the excavator, cannot be accepted. Based on my own work in the site, digging three probes and then preservation work, I suggested a different stratigraphy for the site, resulting in a different history and interpretation. I showed that it was actually not an Egyptian temple at all but was originally a local shrine with standing stones, a large altar rock and a drainage channel, a pavement and basins. Later, the Egyptians built a small shrine for the goddess Hathor attached to the local one. It was in use from the time of Ramesses II to Ramesses V [ca. 1280-1150 BCE] with a break of 20 years within this period”.

According to Avner, not only the historical context of the archaeology of Timna was incorrect, but also several of the chronological anchors for dating the site need revision. He argues that the sophisticated, advanced mining shafts related to the Egyptians have never been found in Egypt while thousands of them were recorded in the Timna Valley, Nahal ‘Amram and the Faynan area in southern Jordan. In fact, he indicates that four furnaces excavated at Timna Site 2, identified as Late Kingdom Egyptian, were actually dated by 14C to the 7th and 8th centuries AD, i.e. the Early Islamic period. As the result of these analyses, the role of the Egyptians in the copper industry along the Wadi Arabah is drastically minimized. The technology of both the mining and smelting of copper was not Egyptian but local, the organization of the work was also in the hands of the local desert tribes; and the sanctuary (not a “temple”) was local, with the addition of an Egyptian “chapel”. The goddess Hathor was not the “owner of the house” but only a guest of the local gods, represented by the standing stones (masseboth).

Avner’s research may find support from additional new studies. Excavations led by Tel Aviv University archaeologist Erez Ben-Yosef at Timna, with tens of new 14C dates, would demonstrate the most intensive period of copper mining and production was the 10th century BCE, long after the Egyptians disappeared from the region. “In my own study of the Nahal ‘Amram copper mines”, argues Avner, “not one Late Kingdom Egyptian sign was ever found, and the very same picture was also found at the Faynan copper mines. The unavoidable conclusion is that the large scale copper industry of the Arabah was in the hands of the local desert tribes, the ‘Shasu’. They were the geologists, mining engineers and the physicists with the knowledge of copper smelting and also the organizers of the entire massive work”.

So, what was the role of the Egyptians? For Avner, “they were actually only good consumers who needed large amounts of smelted copper, thereby letting the desert population gain great revenue.” He concludes with irony that “while the entire emphasis was previously on the Egyptians, now the desert people become the hero of the story.”

Now Avner is excavating in a nearby area, the Nahal ‘Amram copper mines. His team has discovered many more mines than those previously known, and has made a detailed mapping of many mines from different periods, conducting small scale excavations that yielded ample new finds and new 14C dates. He is also conducting large numbers of chemical analyses of copper ore and slag in an attempt to reconstruct the ancient technologies of smelting of different periods.

Digging ancient smelting workshops

“I love conducting archaeological surveys and excavations in the desert”. Israel Antiquities Authority archaeologist Tali Erickson-Gini certainly likes her job. “Very ancient finds, even from prehistoric eras, are found close to the surface with little vegetation to hide them. This makes it much easier to determine certain characteristics of architecture and flint scatters and other finds over a very wide region in a way that is far more difficult in settled areas with higher rainfall. The summer months can be a bit harsh and at Timna we are fortunate to work every year in December, which is ideal. We have never had any problems with the heat or cold there during that time of year – it is always pleasant. But it is possible to excavate and survey in the summer months as well and at higher elevations there are good breezes from mid-day”.

A few kilometers to the northwest of the shrine of Hathor is located Site 2, a smelting site that Dr. Erickson-Gini is excavating since 2005. In the article “Timna Site 2 Revisited”, she upholds Rothenberg’s main conclusions, seeing Timna as a predominantly Egyptian-run mining enterprise. The main discoveries are the remains of copper smelting activities, such as furnaces, concentrations of slag, charcoal, fragments of tuyeres, mortars and stone hammers. Structures in the site contained ceramic sherds (many of the “Qurayyah” or “Midianite” painted ware type), animal bones, and a variety of shells and bones. The key evidence are the 14C datings taken from the site’s organic remains. These datings, according to Erickson-Gini, attest that the smelting activities took place mostly between the 13th and 11th centuries BCE, with evidences of small smelting going back as early as the 15th century BCE.

For Erickson-Gini, “to date, the renewed excavations in Timna Site 2 have confirmed Rothenberg’s dating of the site in the Late Bronze Age and the beginning of the Iron Age. From the evidence discovered over the years in Timna, it is obvious that the Egyptians exploited the mines in Timna during the New Kingdom period. It is doubtful that we will ever know specifics about the organization of the mining and smelting and which ethnic groups were involved and to what degree. However, continued research will allow us to find a certain direction in an attempt to answer these questions”.

As for Dr. Ben-Yosef own excavations in nearby smelting camps, she asserts that, “as far as I know, Ben-Yosef’s excavations in areas close to Site 2 have revealed a similar picture as opposed to his work in Site 34, a site which is quite different in many respects to Site 2 and clearly of a later date”.

For Erickson-Gini, one of the most exciting questions is the involvement of local people from northern Arabia (Rothenberg’s “Midianites”). She argues that the on-going research in that region has already opened up new windows for understanding the ancient culture of oasis dwellers at sites such as Qurayyah and Tayma and that research will probably culminate in major advances in understanding of their activities at Timna.

More studies

In the same volume, other articles disclose more aspects of the archaeology of Timna. In a very technical paper, scientists Sana Shilstein (Weizmann Institute of Science), Sarel Shalev (University of Haifa) and Yuval Yekutieli (Ben-Gurion University of the Negev) study the technology of the archaeological material and copper metallurgy found at Timna Site 2, such as slag, charcoal, ceramics, sediment and corroded metal through the use of XRF with energy dispersion spectroscopy. The “Qurayyah” or “Midianite” pottery, a characteristic decorated ceramic made in northwestern Arabia and found in great quantities in Timna, is studied by historian Juan Manuel Tebes (Center of Studies of Ancient Near Eastern History, Catholic University of Argentina). Dr. Tebes’ research engages with the painted iconography of these vessels, which he associates with the social and symbolic world where the potters lived and worked.

The book *Unearthing the Wilderness* was published by Peeters (Leuven, 2014). Other articles focus attention on later periods of the archaeology of the Negev and southern Jordan, including studies of John S. Holladay Jr. and Stanley Klassen, Peter G. van der Veen and François Bron, Yifat Thareani, Lily Singer-Avitz, and Liora Freud.

More information

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[Go there for embedded links]

GLADIATOR FIGHTS REVEALED IN ANCIENT GRAFFITI, BY OWEN JARUS

Hundreds of graffiti messages engraved into stone in the ancient city of Aphrodisias, in modern-day Turkey, have been discovered and deciphered, revealing what life was like there over 1,500 years ago, researchers say.

The graffiti touches on many aspects of the city's life, including gladiator combat, chariot racing, religious fighting and sex. The markings date to a time when the Roman and Byzantine empires ruled over the city.

"Hundreds of graffiti, scratched or chiseled on stone, have been preserved in Aphrodisias - more than in most other cities of the Roman East (an area which includes Greece and part of the Middle East)," said Angelos Chaniotis, a professor at the Institute for Advanced Study, in Princeton New Jersey, in a lecture he gave recently at Toronto's Royal Ontario Museum.

"Graffiti are the products of instantaneous situations, often creatures of the night, scratched by people amused, excited, agitated, perhaps drunk. This is why they are so hard to interpret," Chaniotis said. "But this is why they are so valuable. They are records of voices and feelings on stone." [See Photos of the Graffiti in the Ancient City of Aphrodisias]

The graffiti includes sexual imagery, with one plaque showing numerous penises. "A plaque built into the city wall has representations of phalluses of various sizes and positions and employed in a variety of ways," Chaniotis said.

Trident man vs. sword man

The graffiti also includes many depictions of gladiators. Although the city was part of the Roman Empire, the people of Aphrodisias mainly spoke Greek. The graffiti is evidence that people living in Greek-speaking cities embraced gladiator fighting, Chaniotis said.

"Pictorial graffiti connected with gladiatorial combat are very numerous," he said. "And this abundance of images leaves little doubt about the great popularity of the most brutal contribution of the Romans to the culture of the Greek east." [Photos: Gladiators of the Roman Empire]

Graffiti containing sexual imagery was also found in the city.

Some of the most interesting gladiator graffiti was found on a plaque in the city's stadium where gladiator fights took place. The plaque depicts battles between two combatants: a retiarius (a type of gladiator armed with a trident and net) and a secutor (a type of gladiator equipped with a sword and shield).

One scene on the plaque shows the retiarius emerging victorious, holding a trident over his head, the weapon pointed toward the wounded secutor. On the same plaque, another

scene shows the secutor chasing a fleeing retiarius. Still another image shows the two types of gladiators locked in combat, a referee overseeing the fight.

"Probably a spectator has sketched scenes he had seen in the arena," Chaniotis said. The images offer "an insight (on) the perspective of the contemporary spectator. The man who went to the arena in order to experience the thrill and joy of watching - from a safe distance - other people die."

Chariot-racing rivalry

Chariot racing is another popular subject in the graffiti. The city had three chariot-racing clubs competing against each other, records show.

The south market, which included a public park with a pool and porticoes, was a popular place for chariot-racing fans to hang out the graffiti shows. It may be "where the clubhouses of the factions of the hippodrome were located - the reds, the greens, the blues," said Chaniotis, referring to the names of the different racing clubs.

The graffiti includes boastful messages after a club won and lamentations when a club was having a bad time. "Victory for the red," reads one graffiti; "bad years for the greens," says another; "the fortune of the blues prevails," reads a third.

Three religions

Religion was also depicted in the city's graffiti. "Christians, Jews and a strong group of philosophically educated followers of the polytheistic religions competed in Aphrodisias for the support of those who were asking the same questions: Is there a god? How can we attain a better afterlife?" said Chaniotis.

Grffiti was one way in which these groups competed. Archaeologists have found the remains of statues representing governors (or other elite persons) who supported polytheistic beliefs. Christians had registered their disapproval of such religions by carving abbreviations on the statues that mean "Mary gives birth to Jesus," refuting the idea that many gods existed.

Those who followed polytheistic beliefs carved graffiti of their own.

"To the Christian symbol of the cross, the followers of the old religion responded by engraving their own symbol, the double axe," said Chaniotis, noting that this object was a symbol of Carian Zeus (a god), and is seen on the city's coins.

Aphrodisias also boasted a sizable Jewish population. Many Jewish traders set up shop in an abandoned temple complex known as the Sebasteion.

Among the graffiti found there is a depiction of a Hanukkah menorah, a nine-candle lamp that would be lit during the Jewish festival. "This may be one of the earliest representations of a Hanukkah menorah that we know from ancient times," said Chaniotis.

End of an era

Most of the graffiti Chaniotis recorded dates between roughly A.D. 350 and A.D. 500, appearing to decline around the time Justinian became emperor of the Byzantine Empire, in A.D. 527.

In the decades that followed, Justinian restricted or banned polytheistic and Jewish practices. Aphrodisias, which had been named after the goddess Aphrodite, was renamed Stauropolis. Polytheistic and Jewish imagery, including some of the graffiti, was destroyed.

But while the city was abandoned in the seventh century, the graffiti left by the people remains today. "Through the graffiti, the petrified voices and feelings of the Aphrodisians still reach us, and they still matter," Chaniotis said.

The lecture by Chaniotis was the keynote address given at the annual meeting of the Classical Association of Canada.

Please visit the site: <http://www.livescience.com/51203-ancient-graffiti-gladiator-combat-discovered.html> [Go there for pix]

FACE OF TEHRAN'S 7 MILLENNIA OLD WOMAN RECONSTRUCTED

The reconstruction of the face of Tehran's discovered 7-millennia-old woman had been carried out as part of the anthropological features and documentation. In November 2014, Mahsa Vahabi, an Archeology student serendipitously discovered in the dug soil in Mowlavi St., of Tehran Water and Wastewater Company some pottery.

Her discovery of simple earthen material drew attentions from her fellow archeologist and a study team addressed the place on Mowlavi St. Further excavations uncovered from under the soil bones and skeleton, reportedly and supposedly belonging to a women from 7,000 years ago.

Soon archeology researchers carried out research to find out more about its characteristics. A 3D documentation method was carried out on the skeleton by Mohammad Reza Rokni, an expert in Archeology Research Center.

He told Mehr News that to develop a 3D documentation, "we used whole parts of the skeleton and the principle of symmetry of human skeleton to reconstruct the missing parts or parts which are unfit for the reconstruction."

"The model was developed drawing upon the supine position of the skeleton to represent its true position when interred; to reconstruct the face we added a digital version of missing parts mounted on the 3D model; the prepared model was pinpointed in 11 points in face on eyes, nose, ears, cheeks, lips, and chin, and then the digital texturing filled these pinpoints to give us a clear image of the face," he detailed.

Rokni also commented on the way the hairs of the woman was reconstructed; "since we had no trace of the hairs, choosing a color for hair was a matter of taste; in doing so, we drew upon the signs in pottery found in Cheshmeh Ali; five strong and standard modeling software versions helped us synchronize and corrected," he told Mehr News.

He claimed that the finished reconstructed face would be 95 per cent accurate compared with the original face of woman last seen 7,000 years ago. "This is a common practice to reconstruct the face of skulls; however, the public would be abandoned uninformed about the practice; to make the reconstructed face more true to natural state, we fed some people's faces to the machine to use the details to give a better and improved finished face," he added.

Hamideh Choubak, head of the Archeology Research Center believes it is very interesting for the public to know what the face of ancient past people looked like; she said that the estimations made would not show the level of similarity to the original face.

Please visit the site: <http://en.mehrnews.com/news/107975/Face-of-Tehran-s-7-millennia-old-woman-reconstructed> [Go there for pix]

400,000-YEAR-OLD DENTAL TARTAR PROVIDES EARLIEST EVIDENCE OF MANMADE POLLUTION

New discovery at Tel Aviv University excavation of Qesem Cave reveals early prehistoric 'balanced' diet and presence of respiratory irritants

Most dentists recommend a proper teeth cleaning every six months to prevent, among other things, the implacable buildup of calculus or tartar -- hardened dental plaque. Routine calculus buildup can only be removed through the use of ultrasonic tools or dental hand instruments. But what of 400,000-year-old dental tartar?

Tel Aviv University researchers, in collaboration with scholars from Spain, the U.K. and Australia, have uncovered evidence of food and potential respiratory irritants entrapped in the dental calculus of 400,000-year-old teeth at Qesem Cave near Tel Aviv, the site of many major discoveries from the late Lower Paleolithic period. The research, published in *Quaternary International*, led by Prof. Karen Hardy of ICREA at the Universitat Autònoma, Barcelona, Spain, together with Prof. Ran Barkai and Prof. Avi Gopher of TAU's Department of Archaeology and Ancient Near Eastern Civilizations, in collaboration with Dr. Rachel Sarig of TAU's School of Dental Medicine, Dr. Stephen Buckley of the University of York, Anita Radini of the University of York and the University of Leicester, U.K., and Prof. Les Copeland of the University of Sydney, Australia, provides direct evidence of what early Palaeolithic people ate and the quality of the air they breathed inside Qesem Cave.

Possible respiratory irritants, including traces of charcoal -- manmade environmental pollution -- found in the dental calculus, may have resulted from smoke inhalation from indoor fires used for roasting meat on a daily basis. This earliest direct evidence for inhaled environmental pollution may well have had a deleterious effect on the health of these early humans.

"Human teeth of this age have never been studied before for dental calculus, and we had very low expectations because of the age of the plaque," said Prof. Gopher. "However, our international collaborators, using a combination of methods, found many materials entrapped within the calculus. Because the cave was sealed for 200,000 years, everything, including the teeth and its calculus, were preserved exceedingly well."

In what Prof. Barkai describes as a "time capsule," the analysed calculus revealed three major findings: charcoal from indoor fires; evidence for the ingestion of essential plant-based dietary components; and fibers that might have been used to clean teeth or were remnants of raw materials.

"Prof. Karen Hardy published outstanding research on the dental calculus of Neanderthals from El Sidron cave in Spain, but these dated back just 40,000-50,000 years -- we are talking far earlier than this," said Prof. Barkai.

"This is the first evidence that the world's first indoor BBQs had health-related consequences," said Prof. Barkai. "The people who lived in Qesem not only enjoyed the benefits of fire -- roasting their meat indoors -- but they also had to find a way of controlling the fire -- of living with it.

"This is one of the first, if not the first, cases of manmade pollution on the planet. I live near power plants, near chemical factories. On the one hand, we are dependent on technology, but on the other, we are inhaling its pollutants. Progress has a price -- and we find possibly the first evidence of this at Qesem Cave 400,000 years ago."

The researchers also found minute traces of essential fatty acids, possibly from nuts or seeds, and small particles of starch in the analysed calculus. "We know that the cave dwellers ate animals, and exploited them entirely," said Prof. Barkai. "We know that they hunted them, butchered them, roasted them, broke their bones to extract their marrow, and even used the butchered bones as hammers to shape flint tools. Now we have direct evidence of a tiny piece of the plant-based part of their diet also, in addition to the animal meat and fat they consumed.

"We have come full circle in our understanding of their diet and hunting and gathering practices."

Within the calculus, the researchers also discovered small plant fibers, which they suspect may have been used to clean teeth -- prehistoric tooth picks.

"Our findings are rare -- there is no other similar discovery from this time period," said Prof. Barkai. "The charcoal and starch findings give us a more comprehensive idea of how these people lived their lives -- and this broader view came directly from their teeth."

The research was supported by the Spanish Ministry of Science and Innovation and Pharos Research sponsored the dental calculus work. The Qesem Cave excavations are supported by the Israel Science Foundation, the CARE Archaeological Foundation, the Leakey Foundation, the Wenner-Gren Foundation, the Thyssen Foundation, and the Dan David Foundation.

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Please visit the site: http://www.eurekalert.org/pub_releases/2015-06/afot-4dt061715.php

COULD THE PLAGUE OF ATHENS HAVE BEEN CAUSED BY EBOLA? BY IOANNA ZIKAKOU

Many scientists believe that the first Ebola virus outbreak occurred in 1976 in the Democratic Republic of Congo (then known as Zaire) in Africa, however, a recently published study claims that the first recorded outbreak actually took place in ancient Greece, more than 2,400 years ago.

It has been established that the Ebola virus is very old, since parts identical to its DNA have been discovered in several rodent species, proving that these species ancestors' had been infected with the virus more than 20 million years ago. However, its old ages raises many questions about when Ebola infected humans for the first time.

"Ebola may have spilled over from its animal reservoir to humans well before scientists first identified it in 1976," study author Powel Kazanjian, a professor of history and infectious diseases at the University of Michigan, told Live Science. Powel Kazanjian suggests that the Ebola virus was the cause of the five-year epidemic that broke out in Athens in 430 B.C., also known as the Plague of Athens. Thucydides, a famous ancient Greek historian who was infected during the epidemic and survived, kept a record of what he and the other sick Athenians were going through.

"The Athenian illness, also called Thucydides syndrome, began with an abrupt onset of fever, headache, fatigue, and pain in the stomach and extremities, accompanied by furious vomiting. Those who survived after seven days of illness also experienced severe diarrhea. Additional symptoms included reddened eyes, hiccups and bleeding from the mouth. Stricken individuals also sometimes experienced cough, seizures, confusion, rashes, pustules, ulcers, and even loss of fingers and toes, possibly due to gangrene," according to Live Science.

The disease which often led to the patients' death was vividly described by Thucydides, a fact that helped modern historians and doctors to speculate about the cause of the epidemic. In ancient Greece people from the sub-Saharan area - where the modern day Ebola outbreak took place - migrated to Athens in order to work as farmers or servants. These migrants are thought to have brought the disease to Athens.

According to Kazanjian, the Plague of Athens symptoms, mortality rate and place of origin are consistent with what we currently know about the Ebola virus. "Physicians were among the first victims of the Athenian disease in Thucydides' account, just as modern health care workers have proven especially vulnerable to Ebola," he said. "Diseases like Ebola, which we sometimes lump into the category of a new or emerging disease, may actually be much older than we realize," Kazanjian said.

Please visit the site: <http://greece.greekreporter.com/2015/06/19/could-the-plague-of-athens-have-been-caused-by-ebola/>

8 MILLION MUMMIFIED ANIMALS, MOSTLY DOGS, IN CATACOMBS AT EGYPT SITE, BY GREG BOTELHO

Archaeologists explore the catacombs of Anubis, an Egyptian god that's half-dog, half-human

They estimate more than 8 million animals, mostly dogs, were stacked there wrapped in bandages "We hadn't expected that there would be so many animals," lead Egyptologist says

(CNN)For centuries, dogs have been humans' loyal, domesticated companions. They've been wild animals, doing what's needed to survive. And in ancient Egypt, they served as bridges to the afterlife, with the hope that they'd intercede with the god Anubis on their owner's behalf.

But only now is it becoming known the extent to which dogs served this latter role -- 8 million times over.

That is the number of dead animals, most of them dogs, estimated to have laid in the catacombs of Anubis around Saqqara, one of Egypt's most historic and oft-visited sites, according to a group of British researchers. While such mass burials aren't unprecedented, given the numerous animal cults of ancient Egypt, this one's scale makes it unique.

"We're very pleased and somewhat surprised by the results," the project's director Paul Nicholson from Cardiff University's School of History, Archaeology and Religion said Saturday. "We hadn't expected that there would be so many animals, and it opens up a new series of questions."

One question that experts can at least partially answer is why an Egyptian might have brought an animal, dead or alive, to such a place.

Nicholson, who has been studying animal cults since the 1990s, explains that people wouldn't have come simply to kill or even bury an animal so much as allow it to move onto a different plane. A dog, especially, would be a good fit because it might then interact with Anubis, an ancient Egyptian god of the dead depicted with the body of a man and head of a dog or, its close relative, a jackal.

"The important thing was to provide a representation of the god with a fitting burial," Nicholson said. "It's not some sort of blood sacrifice. It's a religious act that's done for the best possible motive."

The animal's owner would hope that, by doing this, "some good will come to you," the Wales-based Egyptologist noted. "Maybe you're hoping that the animal will help someone in your family who has died recently (so that) Anubis will take care of that (relative)."

Just as Egyptians' view of Anubis, and dogs, has been common knowledge for some time, so too have the dog catacombs of Anubis. This includes a map from 1897 that shows their location clearly marked.

Still, most of the focus was on temples outside the catacomb. Until, that is, Nicholson's team -- with the support and help from Egypt's Supreme Council of Antiquities and sponsorship from National Geographic -- began working on the Saqqara site around 2009 and began exploring deep inside.

They found a series of unadorned tunnels, in some cases filled with animal remains and in other cases cleared out. (Nicholson speculated that some may have been taken out for use in fertilizers, as has been done with other animal remains.)

Those that they found were wrapped in bandages and mummified, including some with a resin applied. One shouldn't imagine an ornate King Tut, though: They were likely stacked on top of each other and "survived very badly," Nicholson said.

"It would be quite difficult to easily find complete, nicely wrapped mummies," he added. "What you have got is the decayed remains of the mummies."

To estimate how many there are, the team took a sample and extrapolated from there how many likely filled up the catacomb. One reason the number is so high is because many of the animals were very small; while there some were mature and likely had full lives, Nicholson speculated that some were "being especially bred for the cult."

The catacombs are believed to date from between roughly 750 to 30 B.C., up to the time Egypt's society was interacting more and more with those of Europe, including ancient Greece and Rome.

A summary of the Cardiff team's findings was published this week in the journal *Antiquity*. Nicholson and his co-authors, Salima Ikram and Steve Mills, are now working on a more complete study. And the work continues at the Saqqara site, which includes other animal catacombs and many monuments like the step pyramid of Djoser, as well as in laboratories to discover more about the animal remains, such as patterns of sex and age.

"We are very curious about where the animals came from," Nicholson said. "We're learning quite a bit about the Egyptians' interactions with animals. It's an exciting thing."

Please visit the site: <http://www.cnn.com/2015/06/20/africa/egyptian-millions-mummified-dogs/index.html>

INTO THE LIGHT: HOW LIDAR IS REPLACING RADAR AS THE ARCHAEOLOGIST'S MAP TOOL OF CHOICE

A technology using rapid pulses of light is helping archaeologists to chart ancient settlements hidden beneath dense forest canopies Guy Gugliotta for the Washington Post

Colorado State University archaeologist Chris Fisher found out about lidar in 2009. He was surveying the ruins of Angamuco in west-central Mexico the traditional way, with a line of grad students and assistants walking carefully while looking at the ground for bits of ceramics, the remains of an old foundation or even a tomb.

He had expected to find a settlement, but instead he happened upon a major city of the Purepecha empire, rivals of the Aztecs in the centuries immediately preceding the Spanish conquest of Mexico in 1519.

The site covered 13 sq km; traditional surveying would have taken years, so he turned to a technology that uses pulses of light to penetrate the forest and ground cover to reveal what lay beneath. "In two seasons we had surveyed only two square kilometres," Fisher said. But with this new technology - lidar - "we mapped the entire city in 45 minutes."

The US national mapping center used lidar in Belize to survey Caracol, a major Mayan city more than 1,000 years ago. Photograph: Caracol Archaeological Project, University of Central Florida Today, lidar - short for light detection and ranging - is a key archaeology tool that can detect not only buildings but also the remains of roads, agricultural terraces, aqueducts, caves, fences and even boundaries between ancient neighbourhoods.

Using hardware based on the ground or on an aeroplane, Lidar can produce images in three dimensions. In the future, drones will probably do most of the surveys. Besides Mexico, lidar has been used to penetrate forest canopy in many countries - among them Belize, Honduras, Guatemala and Cambodia - where the vegetation had been too dense or too troublesome to allow for traditional methods.

"We've extended our [lidar] coverage by nearly 2,000 square kilometres," archaeologist Damian Evans of the French School of Asian Studies said. He is based in the ancient Cambodian city of Angkor, where he is working as project supervisor. "Even our first rough results are showing us things that people have never seen before."

Lidar came into use in the 1960s, shortly after the laser was invented. It works like radar, calculating distance by measuring the time it takes for a reflected signal to return. But while radar uses radio waves for its signal, lidar uses a pulse of light.

What makes lidar a better choice for many applications, including archaeology, is that the wavelength is about half a micron - tiny relative to radar wavelengths, which are measured in centimetres or decimetres. For details of a relatively small spot on the ground, lidar provides a precision that radar cannot match.

But not at first. To make lidar effective in areas with heavy forest canopy or even low-lying vegetation, engineers needed to increase the pulse rate. The first devices produced about 2,000 pulses, or shots, per second, useless in the jungle because the vast majority of shots bounce off leaves and never reach the ground. Today's archaeological surveys are routinely carried out at pulse rates up to 600,000 shots per second.

The second feature that defines modern lidar surveys is "stops per shot". Each shot is scattered by leaves and other vegetation as it travels towards the ground. Modern lidar can count up to four of these "stops" - obstacles - for each pulse. The fourth stop, if there is one, is the ground.

The initial picture a lidar engineer sees is called the "point cloud", a misty compendium of every pulse and every stop that the machinery has recorded at multiple elevations. Software can help a technician filter out everything but the last stop. The pattern that emerges is the topography below the trees - the ground plan of an archaeological site. And because of variations in the height of objects on the ground, engineers can show the contours, effectively creating maps in three dimensions.

Lidar has myriad applications. Police use it in traffic speed guns; meteorologists use it to examine layers of the atmosphere and to search for concentrations of air pollution; Nasa uses it in docking devices at the International Space Station; the US military uses it to provide quick and detailed terrain mapping for troops.

Lidar technology helped produce this colour topical representation of the ancient city of Caracol. Photograph: Caracol Archaeological Project, University of Central Florida
European archaeologists in the 1970s were among the first to use lidar to tease ancient landscapes from different types of terrain.

"They were mapping old castles and looking at fields," said scientist William E. Carter, who specialises in the mapping of specific places on Earth at the National Science Foundation's National Center for Airborne Laser Mapping. "But it was temperate-zone work, almost all farmland." Nobody using early lidar instruments had been successful at penetrating dense rain forest. "When all you had were 5,000 shots per second, you could spend your life flying over the trees and get nothing."

Carter first used lidar in the 1980s, working for the US National Oceanic and Atmospheric Administration and the National Geodetic Survey before moving to the University of Florida, which in 2003 became a joint founder of the US National Mapping Center, along with the University of California at Berkeley and the National Science Foundation. In 2010 the centre moved to its current location at the University of Houston.

The centre undertook its first major rainforest assignment in 2009, when University of Central Florida archaeologists Diane and Arlen Chase asked it to survey Caracol, a major Maya city more than 1,000 years ago. By this point, the centre's aeroplane-mounted lidar was able to pulse 125,000 times per second.

Given Caracol's dense vegetation, harsh topography and lack of access, "we were tired of doing foot survey", Diane Chase said. "We wanted the full extent of the site." On foot,

structures in the jungle were hard to map, she said, and agricultural terraces were "almost impossible". Lidar produced the details of a site that covered 200 sq km - an area slightly larger than Washington DC - with agricultural terraces everywhere. "We could study the distribution of reservoirs, housing, roads, markets - all the parts of the city - things we had never seen before."

Fisher, at Angamuco, and Evans, at Angkor, both heard about the stunning results at Caracol, and both have been surveying with lidar ever since. Evans mounts his hardware in a helicopter for "operational flexibility" because he is expanding his survey north of Angkor in an environment "where we're 100 miles [160km] from the nearest airport". The research team sends a pickup truck with fuel for the helicopter to a clearing and "the chopper just touches down".

In Mexico, Fisher is partnering with a nearby French research team in an expanded survey of the Purepecha area. The region is malpais - "bad country" with thick soil and a lot of rocks - unsuitable for tractors and other modern equipment but good for ancient farmers who had no farm animals and had to sculpt and shape the terrain by hand, he said. "It was a really rich environment," Fisher said. "They had big garden spaces, reservoirs and terraces. Lidar lets you see it all."

Each job presents its own challenges. In Cambodia, surveyors frequently have to go carefully through the lidar data, or point cloud, to spot traces of ancient ruins and infrastructure that lie below relatively modern roads, buildings and agricultural fields. In Mexico, the terrain is relatively uncluttered, but the forest cover varies in height, and structures are small and mostly made of the same volcanic stone that underlies the entire area.

"This is the first time we've worked in this environment," said National Mapping Center engineer Juan Fernandez Diaz. "In areas like Belize, Guatemala and Honduras, the tall, denser trees make it easier to pull features from underneath the canopy. When you're trying to pull small features, the return can get mixed up with shorter vegetation."

And of course, with ancient ruins, the appetite always grows with the feeding. "The more we do, the more we find," Fernandez Diaz said. "People always ask, 'If you lidar something, will you know everything?' The answer is always 'no.'"

This article appeared in Guardian Weekly, which incorporates material from the Washington Post

Please visit the site: <http://www.theguardian.com/science/2015/jun/20/lidar-radar-archaeology-central-america> [Go there for pix]

ANCIENT GREEK 'ANTIKYTHERA' **SHIPWRECK STILL HOLDS SECRETS,** **BY ELIZABETH GOLDBAUM**

An ancient shipwreck doesn't give up all its secrets at once. Greek authorities have approved a five-year extension for an international team of explorers to continue probing the remains of a 2,085-year-old shipwreck known for holding what is considered the world's oldest computer.

The ship, which likely sank between 70 B.C. and 60 B.C. as it trekked west from Asia Minor to Rome, holds plenty of treasure: During the first phase of the project "Return to Antikythera," which ended in October 2014, undersea explorers found tableware, a lead anchor, a giant bronze spear that may have been part of a statue of a warrior or the goddess Athena, and other artifacts.

With this newly approved extension, researchers will focus on known hotspots for pottery and metal objects; the team hopes to complete a detailed map of the wreck site and excavate treasure and artifacts from the ship.

In preparation for this second phase, slated to begin at the end of summer, researchers sent an [autonomous underwater vehicle](#) (AUV) to digitally survey the shipwreck from June 9 to 19. On Saturday, June 13, the AUV and its metal detector located small pieces of copper-, bronze-, lead- and iron-bearing materials. The following Monday, the AUV got up close and personal with the artifacts, taking pictures and collecting spatial data, including where the artifacts are in relation to each other. Over the next five years, beginning at the end of this summer, the researchers will excavate pieces of the Antikythera shipwreck.

Luxury goods

The previous expedition, which began in 2012, was a collaboration between the Hellenic Ephorate of Underwater Antiquities in Greece and Woods Hole Oceanographic Institution (WHOI) in Woods Hole, Massachusetts. The two entities will continue to work together on the second phase, with aid from WHOI's diving robotic [Exosuit](#), which the researchers describe as "[Iron Man for underwater science](#)."

The 2012-2014 expedition resulted in a 3D model of the seafloor with photos of the wreckage. Researchers also added metal-rich locations to the map data. The new data went into the geoinformation system (GIS) database, which includes all known geographic data for the region since 1900.

Researchers found two sites that are separated by 328 feet (100 meters), which means either the ship broke into two sections after smashing into the rock coast, or there were two ships that simultaneously met their doom.

"The evidence shows this is the largest ancient shipwreck ever discovered," Brendan Foley, a marine archaeologist from WHOI, [said in a previous statement](#). "It's the Titanic of the ancient world."

The expedition thus far has yielded a range of artifacts. "The shipwreck of Antikythera offers a glimpse into the diversity of its cargo," Aggeliki Simosi, the director of the

Hellenic Ephorate of Underwater Antiquities, [said in a statement](#). She added that the ship's discovery confirmed the existence of a luxury-goods trade route along eastern Mediterranean countries. "The ship that sank at Antikythera was not merely a cargo ship. It was essentially a floating museum," she said.

Cousteau expedition

The [Antikythera shipwreck](#) was discovered by a couple of sponge fishermen from the Greek island Symi over a century ago off the coast of Antikythera, a small Greek island with a population of 45. The dive of the fishermen revealed pieces from the wreck — he brought to the surface an arm from a bronze statue that had settled between 138 and 164 feet (42 and 50 m) below the surface.

With assistance from the Greek Education Ministry and Royal Hellenic Navy, the sponge divers recovered various statues, including those of Ulysses, Diomedes and his horses, Hermes, Apollo, and many others. Upon analyzing the artifacts once they were in the museum, then-Minister of Education Spyridon Stais discovered what is now known as the [Antikythera mechanism](#), which is thought to be the world's oldest known computer.

In 1953, Captain Jacques Cousteau, the famed French naval officer and underwater explorer, along with Massachusetts Institute of Technology engineering professor Harold "Doc" Edgerton, sailed to Antikythera and discovered another shipwreck marked by a lead anchor and amphoras (two-handled vessels for holding a liquid like wine or oil) sticking out of the sand.

Cousteau returned to Antikythera in 1976 for a television series about the history and attractions of Greece. Over the course of 27 days, Cousteau and his team recovered hundreds of objects, including ceramic vessels, parts of marble statues, bronze statuettes, bronze coins, gold jewelry, gemstones, glassware and human skeletal remains.

Please visit the site: http://www.livescience.com/51302-antikythera-shipwreck-expedition-extended.html?cmpid=514636_2015062

ATHENIAN WEALTH: MILLIONS OF SILVER COINS STORED IN PARTHENON ATTIC, BY OWEN JARUS

Millions of silver coins may have been stored in the attic of the Parthenon, one of the most famous structures from the ancient world, a research team says.

The attic of the Parthenon is now destroyed and the coins would have been spent in ancient times. The researchers made the discovery by reconstructing the size of the attic, analyzing ancient records to extrapolate how large the reserves may have been and re-examining archaeological work carried out decades ago.

Their evidence suggests that millions of coins made up the cash reserves of the city-state of Athens and much of this hoard was stored in the attic of the Parthenon. During the fifth century B.C., when the Parthenon was built, Athens was a wealthy city-state whose people erected fantastic buildings and fought a series of devastating wars against their rival Sparta. This vast reserve of coins would have helped fund those endeavors.

While the Parthenon's attic is now destroyed, researchers estimate its floor would have spanned an area more than three times that of a tennis court, with dimensions of 62 feet wide by 164 feet long (19 by 50 meters) and about 10 feet (3 m) high at the center. The coin reserves were likely placed there around 434 B.C., when the Parthenon was dedicated to Athena, the patron goddess of Athens.

Incredible riches

In the fifth century B.C., Athens was one of the richest and most powerful city-states in Greece. Boasting a large navy, it exacted tribute from other Greek cities in exchange for military protection. Ancient writers say the Athenians kept vast coin reserves on the Acropolis, but don't say exactly where.

For instance, one decree dated to around 433 B.C. refers to "3,000 talents" being transferred to the Acropolis for safekeeping, a colossal sum of money, researchers say. The highest-denomination coin minted in Athens at the time was a silver tetradrachm, and it took 1,500 tetradrachms to make one talent, the researchers noted. This means the "3,000 talents" mentioned in the decree would be worth 4.5 million tetradrachms. Such a huge number of coins would have weighed about 78 metric tons, or nearly 172,000 lbs., researchers say. To put that in perspective, that's heavier than the M1 Abrams battle tank used today by American soldiers.

Remarkably, ancient writers said the Athenian reserves could, at times, reach up to 10,000 talents (potentially 260 metric tons).

Researchers caution that Athens may have minted some of its coins in gold (which was worth about 14 times more than silver). If that were the case, the number of coins (and the overall weight of the reserves) would be somewhat less, since it takes fewer gold coins to form one talent.

"Gold coinage was always minimal in Athens, in part because Athens mined silver locally," study researcher Spencer Pope, a professor at McMaster University in Hamilton, Canada, told Live Science in an email. As such, the ancient writer Aeschylus called Athens and its nearby area a "fountain of silver," Pope added.

The ultimate money stash

Ancient records mention nothing about where on the Acropolis the coins were stored, nor do they reveal the purpose of the Parthenon's attic. "The sources are silent on the use of this space," said Pope at a presentation recently in Toronto during the annual meeting of the Classical Association of Canada.

However, there are several reasons why researchers believe the attic was used to store most of Athens' immense coin wealth. [Photos: Mysterious Tomb from Ancient Greece]

While the attic is now virtually destroyed, the remains of a staircase that would've led up to the attic still survive. This staircase appears to have had a utilitarian rather than a ceremonial use, suggesting it could have been used to bring coins to and from the attic.

Additionally, the sheer floor size of the attic not only would have provided room to store the coins, but also would have meant the coins' weight could be spread over a wide area. Assuming the attic was floored with thick cypress wood beams, it would have been able to support the weight of the coins, the researchers say.

Because the Parthenon was located centrally, people would've had an easier time securing and accessing the money there. And criminals would be less likely to steal the coins, as the Parthenon was a temple for Athena - meaning any theft from it would be considered a crime against the goddess.

"The attic of the Parthenon is the only suitable space large enough to hold all of the coins in the Treasury," Pope said in an email. "While we cannot rule out the possibility that coins were distributed across numerous buildings, we should recall that the attic is the most secure space."

Researchers say that the coins may have been stored in boxes whose dimensions could be standardized to make counting easier.

Pope co-wrote the scientific paper with Peter Schultz, a professor at Concordia College at Minnesota, and David Scahill, a researcher at the American School of Classical Studies at Athens.

Please visit the site: <http://www.livescience.com/51353-silver-coins-stored-in-parthenon-attic.html>

EVIDENCE OF PEARL DIVING FOUND AT NEOLITHIC SITE

It is commonly thought that the roots of the UAE's pearling heritage date back to the 19th century. But archaeologists working on Dalma Island suggest people in this region have been diving for pearls for thousands of years.

Excavations on the island, 42 kilometres off the coast of the emirate of Abu Dhabi and 116km from Doha, have discovered the remains of a house thought to belong to Dalma's first inhabitants. The 7,000-year-old site was excavated in 1993 but archaeologists are now looking at a layer of rubbish that contains clues about the people who lived there, including a large amount of pearl oyster shells. This suggests the shallow banks of pearl beds around the island have been explored by humans for thousands of years, said Dr Mark Beech, head of the coastal heritage and palaeontology section at the Historic Environment Department of the Abu Dhabi Tourism and Culture Authority. "Prior to oil, pearl oysters were the thing that gave people wealth and it shows that this wealth goes back far into prehistory," said Dr Beech, whose team includes Dr Anjana Reddy, a coastal heritage archaeologist at the authority, and Dr Nurcan Yalman, research fellow at the Centre for International Heritage Activities in Leiden, the Netherlands. "You are seeing a snapshot in time from 7,000 years ago when someone was sitting just outside the edge of the house, probably in the shade of the roof, opening pearl oysters, looking for pearls. "Those people would have probably found it funny that we are taking such care excavating their rubbish but this is fantastic evidence," said Dr Beech.

The rubbish also reveals what was routinely on the islanders menu - tuna, sea urchins, dolphins, dugongs, turtles as well as sheep and goat. The bones of hammer up to one metre in size were also found, providing a comparison as to the state of fisheries today. The scientists have been able to determine the age of the rubbish through carbon dating on two date stones. One was found to be from 4,600 BC while the older was dated to 5,100 BC. This confirmed what was already suggested by shards of pottery found at the site that appeared to be from the Ubaid period in Iraq, and made 7,500 years ago 700km away. It was unclear how the pottery reached Dalma, said Dr Beech. Archaeologists also found the remains of what appears to be locally made copies of Ubaid pottery. The vessels were made from plaster and adorned with locally available haematite to resemble pieces from Ubaid, suggesting the indigenous people wanted to be part of an Ubaid identity, he said. Dr Yalman said the work being done on Dalma is really important because, "This part of the world is unknown, especially prehistorically." Finding out more details about the Neolithic people of the Gulf will contribute to the overall better understanding of life in those times and the way people interacted. "It is very exciting," she said.

In contrast to the stone houses from the same period excavated on Marawah Island, the Dalma home was most likely made from palm leaves similar to the traditional areesh and round in shape with a diameter of between 7 and 8 metres. Scientists also found a number of stone drills as well as the striped shells of a small gastropod *Engina mendicaria*. The shells appear to have been deliberately modified with the top sliced off, leading the team to believe the building was also used for bead production. Geophysical surveys of the site in October last year suggested that more structures were buried underground. The whole

site could be as large as 200 metres by 150 metres. "We are standing at just one house of what we believe is a whole village dating back 7,000 years," said Dr Beech. He hopes one day the findings will be accessible to the public in the Dalma museum or a new facility. "This is a very important site here but obviously we need to be able to present it to the public and make explanation and have a display of some of the finds on the island," he said.

Please visit the site: <http://archaeologynetwork.blogspot.co.il/2015/06/evidence-of-pearl-diving-found-at.html#.VY12eflVikq> [Go there for pict and map]

MYSTERIOUS 2000-YEAR-OLD MARBLE DOLPHIN SURFACES NEAR GAZA, BY ILAN BEN ZION

Archaeologists think 16-inch-high statuette found in southern Israel may have been part of larger sculpture, wonder how it ended up in Byzantine floor

You would think that 12 miles inland from the Mediterranean Sea is the last place to find a dolphin clutching a fish between its jaws.

Hewn from marble, the 2,000-or-so-year-old statuette surfaced during archaeological excavations near Kibbutz Magen, bordering the Gaza Strip, in March of this year.

The discovery of the dolphin statue amid the ruins of a late Byzantine and early Islamic site in the northern Negev was only announced this week by Israel's Antiquities Authority.

Alexander Fraiberg, head archaeologist with the IAA team, said he believes the sculpture dates to the Roman era, but was incorporated into a later, Byzantine-era paved floor alongside other spolia.

"It's interesting because the statuette was lying face down, so it was impossible to see its appearance," he said. Standing about 16 inches high, experts believe the dolphin may have been part of a larger sculpture, possibly a life-size statue of a god or goddess.

"It's possible that the [full] statue was of the [Greek] goddess of love and beauty, Aphrodite, who was born from seafoam," Dr. Rina Avner, an IAA archaeologist specializing in the Roman and Byzantine periods, said.

Statues of Aphrodite, such as the Aphrodite Pudica with Eros Astride a Dolphin at the Dayton Art Institute, depict her alongside a cetacean, symbolizing her origins.

"It's also possible that the statue was of Poseidon, god of the sea," who was typically depicted along with dolphins in Classical iconography, Avner added.

Both Aphrodite and Poseidon appear on contemporary coins from the nearby ancient port city of Ashkelon, which was also home to a major temple to the goddess of love.

"The mystery," said Fraiberg, "is where the statue came from, who destroyed it, when, and under what circumstances, and who brought the piece with the dolphin to the site."

Please visit the site: <http://www.timesofisrael.com/2000-year-old-marble-dolphin-surfaces-near-gaza-strip/> [Go there for pix]
