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Πληροφοριακό Δελτίο της Ελληνικής Αρχαιομετρικής Εταιρείας

- Απρίλιος 2015 -

**You don't develop courage by being happy in your
relationships every day. You develop it by surviving
difficult times and challenging adversity. *(Epicurus)***

Newsletter of the Hellenic Society of Archaeometry

- April 2015 -

Nr. 169

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ΣΥΝΕΔΡΙΑ - CONFERENCES/WORKSHOPS

34TH INTERNATIONAL CONFERENCE FOR DYES IN HISTORY AND ARCHAEOLOGY (DHA34), 21-24 OCTOBER, 2015, THESSALONIKI, GREECE

We are pleased to announce the 34th international conference for Dyes in History and Archaeology (DHA34).

The conference will take place from 21-24 October, 2015, in the city of Thessaloniki, Greece. The Department of Management and Conservation of Ecclesiastical Cultural Heritage Objects at the University Ecclesiastical Academy of Thessaloniki is delighted to host DHA34.

Presentations will take place on Thursday 22nd and Friday 23rd October, in the main Hall of the University campus. The optional social programme includes a Welcome reception (Wednesday 21 October) and an excursion (Saturday 24th October).

DHA is an annual series of conferences that covers all areas concerning dyes and organic pigments including their history, production, application, characterisation and analysis, properties and identification. Consequently, DHA34 aims to attract conservators, curators, art historians, craftsmen, artists and scientists from museums, universities, research institution and other public or private entities as well as independent scholars.

We look forward to welcome you in Thessaloniki.

On behalf of the organizing committee,

Ioannis (Yiannis) Karapanagiotis, Associate Professor
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http://scholar.google.com/citations?hl=en&user=eRCSEQQAAAAJ&view_op=list_works&sortby=pubdate

The web site of the event will be updated regularly and it is now available at:
www.dha2015.gr

CYCLADIC SEMINAR – ΚΥΚΛΑΔΙΚΟ
ΣΕΜΙΝΑΡΙΟ, THE ARCHAEOLOGICAL
SOCIETY AT ATHENS, 22 ΠΑΝΕΠΙΣΤΗΜΙΟΥ
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ΠΡΟΓΡΑΜΜΑ 2015 - PROGRAMME 2015

Τρίτη, 28 Απριλίου - Tuesday, 28 April

Πέγκη Σωτηρακοπούλου

Τα δεδομένα της «ομάδας του Καστριού» από το Δασκαλιό της Κέρου και τα εξ' αυτών συμπεράσματα για το τέλος της Πρώιμης Χαλκοκρατίας στις Κυκλάδες
The Kastri group evidence from Dhaskalio, Keros and its implications for the late Early Bronze Age in the Cyclades

Τρίτη, 10 Νοεμβρίου - Tuesday, 10 November

Cyprian Broodbank

A comparative Mediterranean perspective on the Early Bronze Age Cyclades
Η Μεσόγειος και οι Κυκλάδες της Πρώιμης Εποχής του Χαλκού: Μια συγκριτική προσέγγιση

Τρίτη, 15 Δεκεμβρίου - Tuesday, 15 December

Wolf-Dietrich Niemeier & Ουρανία Κουκά

«Cycladica» από το Ηραίον και τη Μίλητο
'Cycladica' from Heraion and Miletus

COLLOQUIUM SPECTROSCOPICUM
INTERNATIONALE XXXIX, CSI 2015,
FIGUEIRA DA FOZ, (COIMBRA), PORTUGAL,
30 AUGUST - 3 SEPTEMBER 2015

<http://csi2015.fis.uc.pt>

Announcement and Call for Papers

DEADLINE FOR ABSTRACT SUBMISSION: 11 May 2015

REGISTRATION OPEN

REGISTRATION AND FEE PAYMENT AT REDUCED RATE: UNTIL 30 June 2015

PROCEEDINGS WILL BE PUBLISHED IN A SPECIAL ISSUE OF "SPECTROCHIMICA ACTA A and B" (after peer review)

Dear Colleagues,

It is our pleasure to announce that, in 2015, the **Colloquium Spectroscopicum Internationale XXXIX** will be held in **Portugal** in **Figueira da Foz** (<https://vimeo.com/7611189>), a beautiful beach resort on the "Silver Coast", close to Coimbra, the historical city that hosts one of the oldest universities of Europe (1290 <http://www.uc.pt/en/sobrenos/history>).

You are invited to participate in the conference, to submit abstracts for oral presentations and posters, and to submit a paper for publication in the conference proceedings.

Please visit the conference website <http://csi2015.fis.uc.pt> where you will find more information on the conference and the covered technical topics, conference venue, scientific program and social program.

As in previous meetings, this conference wishes to gather physicists and chemists from universities and research institutions as well as industry analysts from all over the world in all fields of analytical spectroscopy, optical spectroscopy and related topics.

We encourage industrial and commercial professionals to participate, exhibiting their solutions and equipment in the conference, integrated in the scientific event location. Conditions are sent to the companies or can be requested to the email address csi2015@fis.uc.pt

Also included in the **Registration Fee** are **all the social events** (in particular: welcome dinner, conference dinner, lunches from Monday to Thursday, excursion (either to Coimbra and to the old University or to the Fatima Sanctuary and Monastery of Batalha, which is considered UNESCO World Heritage)

The **hotels** in Figueira da Foz present very **attractive prices**, e.g. (Bed&Brekfast single/double room):

Hotel Mercure (4*) 66€/77€ per night (facing the beach);
Sweet Atlantic (4*) 74€/86€ per night (facing the beach);
Hotel Costa de Prata (renewed) (3*) 45€/55€
Hotel Costa de Prata & SPA (3*) 40€/45€

As an alternative, you can simulate on online-booking sites, for the dates and conditions you wish, and you will find good accommodation conditions with rates as low as 30€/night B&B.

All the hotels are located within 5 to 10 minutes walking distance from the conference hall and close to/in front of the beach.

We look forward to your abstract submission,

Welcome to Figueira da Foz, Portugal!

The Local Organizing Committee

http://www.nature.com/natureevents/science/events/24653-COLLOQUIUM_SPECTROSCOPICUM_INTERNATIONALE_XXXIX

<http://physicsworld.com/cws/events/2&month=8&year=2015>

<http://www.spectroscopynow.com/atomic/details/event/14bd9e6116a/CSI-2015---Colloquium-Spectroscopicum-Internationale-XXXIX.html>

<http://www.globaleventslist.elsevier.com/events/2015/08/colloquium-spectroscopicum-internationale-csi-2015/>



ΗΜΕΡΙΔΑ ΣΥΝΤΗΡΗΣΗΣ ΑΜΘ 2015,
«ΥΦΑΣΜΑ», ΠΑΡΑΣΚΕΥΗ 6 ΝΟΕΜΒΡΙΟΥ,
ΑΙΘΟΥΣΑ «ΜΑΝΟΛΗΣ ΑΝΔΡΟΝΙΚΟΣ»,
ΑΡΧΑΙΟΛΟΓΙΚΟ ΜΟΥΣΕΙΟ
ΘΕΣΣΑΛΟΝΙΚΗΣ

Το Αρχαιολογικό Μουσείο Θεσσαλονίκης θέσπισε και καθιέρωσε στο πλαίσιο των δράσεων του, τη διεξαγωγή ημερίδων συντήρησης, με πρωτοβουλία του τμήματος Συντήρησης, Χημικών και Φυσικών ερευνών και Αρχαιομετρίας του μουσείου. Οι ημερίδες αυτές, με άξονα τη συντήρηση των αρχαιοτήτων κι έργων τέχνης, προωθούν το διεπιστημονικό διάλογο ανάμεσα σε ποικίλες ειδικότητες από το χώρο των ανθρωπιστικών σπουδών έως και τις θετικές επιστήμες, εστιάζοντας τη θεματολογία τους κάθε φορά σε ένα πρωτογενές υλικό που χρησιμοποιήθηκε για την κατασκευή τέχνηρων ιστορικής αξίας. Μέχρι σήμερα έχουν διεξαχθεί τέσσερεις ημερίδες με θέμα το Λίθο, το Σίδηρο, το Γυαλί και το Κονίαμα (Τοιχογραφία). Η επιτυχία και αποδοχή αυτού του θεσμού αλλά και το επιστημονικό ενδιαφέρον που παρουσιάζει εν γένει η επιστήμη της συντήρησης αρχαιοτήτων κι έργων τέχνης, μας οδήγησε στον προγραμματισμό της πέμπτης ημερίδας συντήρησης του ΑΜΘ, η οποία είναι αφιερωμένη στο ύφασμα.

Οι κύριες θεματικές ενότητες, αλλά όχι αυστηρά αποκλειστικές, μέσω των οποίων επιδιώκεται μία σφαιρική και ουσιαστική προσέγγιση των ζητημάτων που άπτονται της συντήρησης και της έρευνας υφασμάτων τέχνηρων είναι:

- Ιστορία, χρήσεις και τεχνολογία κατασκευής του υφάσματος
- Επιστημονική διερεύνηση του υλικού και της διάβρωσής του
- Επεμβατική και προληπτική συντήρηση του υφάσματος

Η ημερίδα του 2015, διοργανώνεται με τη συνεργασία του τμήματος Συντήρησης, Χημικών και Φυσικών ερευνών και Αρχαιομετρίας και του τμήματος Συλλογών Κεραμικής, Τοιχογραφιών και Ψηφιδωτών του ΑΜΘ και θα πραγματοποιηθεί την Παρασκευή 6 Νοεμβρίου, στην αίθουσα «Μανόλης Ανδρόνικος» του Αρχαιολογικού Μουσείου Θεσσαλονίκης.

Με αυτήν την πρώτη εγκύκλιο, σας ενημερώνουμε για τις θεματικές ενότητες της ημερίδας και σας καλούμε να πλαισιώσετε το θεσμό και να συμμετέχετε με ανακοινώσεις, οι οποίες θα αποτελέσουν συμβολή στη γνώση μας για τη συντήρηση του υφάσματος. Οι υποψήφιοι ομιλητές καλούνται να καταθέσουν **περίληψη 300 λέξεων μέχρι το τέλος του Αυγούστου**, προκειμένου να συνταχθεί τεύχος περιλήψεων το οποίο θα αναρτηθεί στην ιστοσελίδα του ΑΜΘ. Οι περιλήψεις, μετά την κατάθεσή τους, θα εξεταστούν από την επιστημονική επιτροπή, η οποία θα αποφασίσει και τον τρόπο της παρουσιάσής τους. Το ΑΜΘ θα εξασφαλίσει στους ομιλητές τα έξοδα μετάβασής τους στη Θεσσαλονίκη, καθώς και μία διανυκτέρευση. Σχετικές οδηγίες θα αποσταλούν στους ομιλητές μετά την ολοκλήρωση και δημοσιοποίηση του προγράμματος της ημερίδας.

Για περισσότερες πληροφορίες, παρακαλούμε επισκεφτείτε την ιστοσελίδα του Αρχαιολογικού Μουσείου Θεσσαλονίκης, η οποία θα ανανεώνεται τακτικά με σχετικές πληροφορίες ή επικοινωνήστε με email: amth@culture.gr

Αρχαιολογικό Μουσείο Θεσσαλονίκης – Τμήμα Συντήρησης, Χημικών και Φυσικών ερευνών και Αρχαιομετρίας
Μ. Ανδρόνικου 6, ΤΘ 506 19540 13 Θεσσαλονίκη, Τηλ. 2313 310 200, Fax 2310 861306 www.amth.gr

THEORETICAL ARCHAEOLOGY GROUP
(TAG), UNIVERSITY OF BRADFORD,
14-16TH DECEMBER 2015

Dear Colleagues,

Please find below details of TAG 2015 to be held at Bradford University:

Call for sessions: www.tag2015bradford.org

The next TAG will be held at the University of Bradford, 14-16th December 2015.
The call for sessions is now open. We encourage sessions based on our broad theme of Diversity, however, we are happy to accept proposals outside of the theme.

Diversity:

In our discipline & demographics: students, academics, professionals & community

In what we study: including food and drink, past genders, past identities

The diversity of archaeological practice: i.e. theory, science, lab, fieldwork

Deadline: 22nd May 2015

In order to keep parallel sessions to a minimum, organisers of similar sessions may be requested to collaborate – all in the good spirit of TAG! Session organisers will be notified of the outcome in early June. A call for papers will then follow.

To submit a session proposal, please email TAG-Bradford@bradford.ac.uk with a session abstract, as well as potential (or confirmed) speakers. Please note the TAG email address is staffed part-time, so there may be a delayed reply.

TAG ART BRADFORD – An exhibition 14th-16th December 2015.

A call for visual art, informed by archaeology, preferably exploring the broad concept of ‘Diversity’. The call includes archaeologists exploring art.

Where appropriate, please label reproductions with an indication of scale, year of execution and materials used. No more than five images should be submitted for consideration.

Please contact Kate Johnson K.M.Johnson1@bradford.ac.uk if you are interested in exhibiting artwork, and/or are interested in a participating in a session on this theme.

Initial expressions of interest by 22nd May 2015

We look forward to seeing you there.

Claire Copper

Co-ordinator TAG 2015

TECHNART 2015: PRELIMINARY SCIENTIFIC PROGRAMME

Dear Colleagues,

We would like to inform you that the preliminary Scientific Programme of the TECHNART 2015 Conference is available at:

http://technart2015.lns.infn.it/images/TECHNART2015_Programme.pdf

On behalf of the Organizing Committee

Francesco Paolo Romano
Giuseppe Spoto
Austin Nevin

BRITISH SCHOOL AT ATHENS, **LIST OF EVENTS APRIL – JUNE 2015**

WEDNESDAY, 6TH APRIL 2015 AT 5.00 P.M.

Landscape use in the northern Aegean Bronze Age through isotopic analysis of archaeobotanical and faunal remains

Dr Erika Nitsch (University of Oxford/Fitch Laboratory, BSA)

Location: Loring Hall, ASCSA

Fitch - Wiener Seminar

MONDAY, 20TH APRIL 2015 AT 7.00 P.M.

Νέα στοιχεία για τα Προπύλαια

Dr Tasos Tanoulas

Location: British School at Athens, Upper House

Upper House Seminar

MONDAY, 27TH APRIL 2015 AT 7.00 P.M.

Colour and light: exploring visual phenomena in Minoan Neopalatial seals

Dr Erin McGowan (Oxford University & Richard Bradford McConnell Student, BSA)

Location: British School at Athens, Upper House

Upper House Seminar

MONDAY, 4TH MAY 2015 AT 7.00 P.M.

Middle Pleistocene Hominids in Greece: a view from the Acheulean site of Rodafnidia on Lesbos

Prof. Nena Galanidou (University of Crete)

Location: British School at Athens, Upper House

Upper House Seminar

FRIDAY 8TH – SUNDAY 10TH MAY 2015

Music, language and identity in modern Greece: defining a national Art Music in the 19th and 20th centuries

Organizers: Centre for Hellenic Studies (KCL), Department of Music (KCL), Athens Conservatoire, British School at Athens

Location: Athens Conservatoire and British School at Athens

Conference

MONDAY, 11TH MAY 2015 AT 7.00 P.M.

The western traditions of ancient history

Prof. Oswyn Murray (University of Oxford)

Location: British School at Athens, Upper House

Upper House Seminar

FRIDAY, 15TH MAY 2015

Terracotta sculpture: new finds & new studies

Location: BSA, Upper House

Workshop

MONDAY, 18TH MAY 2015 AT 7.00 P.M.

Lusieri's excavations in Athens at the time of Lord Elgin

Tatiana Poulou (Athens Ephorate of Antiquities)

Location: British School at Athens, Upper House

Upper House Seminar

MONDAY, 25TH MAY 2015 AT 7.00 P.M.

Pindar and Corinth

Prof. Catherine Morgan (Director, BSA)

Location: Upper House

Upper House Seminar

WEDNESDAY, 26TH MAY 2015 AT 5.00 P.M.

Luminescence dating in geoarchaeological studies

Evangelos Tsakalos (Archaeometry Laboratory, NCSR Demokritos)

Location: Loring Hall, ASCSA

Fitch - Wiener Seminar

WEDNESDAY, 10 JUNE 2015 AT 5.00 P.M.

The Mycenaean wreck of the islet of Modi: an interdisciplinary maritime research project in the Saronic Gulf

Dr Christos Agouridis (Greek Ministry of Culture & Sport and IENAE)

Location: Fitch Laboratory

Fitch - Wiener Seminar

THURSDAY, 25 JUNE 2015 AT 7.30 P.M.

Garden Party

WORKSHOP ON THE X-RADIOGRAPHY OF CULTURAL MATERIALS

A workshop entitled The X-Radiography of Cultural Materials will be held in the Conservation Department of the Royal Ontario Museum, May 5th, 6th, 7th, 2015. The workshop will be led by the foremost authorities on the radiography of historic materials, Dr. Sonia O'Connor and Mr. Tom Sparrow of the Archaeological Sciences department of the University of Bradford, UK.

The workshop will focus on capturing and improving the quality of x-rays images using digital image capture systems, at low, medium and high kV, and dealing with associated problems relating to different types of materials including textiles, paintings, metals, stone and paper. The workshop will be a blend of lectures and hands-on training.

This workshop is a must for X-ray technicians, conservators and conservation scientists who want to up-grade their skills using x-radiographic imaging techniques. Many of the lectures and aspects of the workshop will also appeal to those who may not routinely practice x-radiography but use images for interpretive purposes e.g. conservators in a particular discipline like textiles, metal or paintings.

There are a few remaining spots available. If you are interested in applying please send an email to: heidis@rom.on.ca; a short application will be sent back for you to fill out. Successful applicants will be notified almost immediately, as this is on a first come, first served basis. The registration fee is \$750.00 CAD; additional travel and accommodation costs will also be borne by the applicant.

Sincerely,
Heidi Sobol
XCM-ROM 2015 Co-organizer

heidis@rom.on.ca

ENVIRA2015: NEW DEADLINE FOR ABSTRACT SUBMISSION

Dear colleagues,

On behalf of the ENVIRA2015 organizing committee, we kindly inform you that the abstract submission deadline is now extended till April 15, 2015.

Participants interested in presenting an oral or poster presentation during ENVIRA2015 are invited to submit an abstract and they will be notified up to May 15, 2015 if their abstract has been accepted as oral communication or poster presentation.

The papers presented during the conference, which will pass a successful reviewing process, will be published in a Special Issue of the Journal of Environmental Radioactivity. The rest of the papers presented during the conference will be published in the Conference Proceedings.

Important dates

NEW Deadline for Abstract Submission:

April 15, 2015

Abstract Acceptance Notification:

May 15, 2015

Early Registration Deadline:

May 15, 2015

Submission Deadline for Papers

Oct 31, 2015

Organizing Committee

**WORKSHOP "THE X-RADIOGRAPHY OF
CULTURAL MATERIALS", ROYAL
ONTARIO MUSEUM, TORONTO,
MAY 5, 6 AND 7, 2015**

On May 5, 6 and 7, 2015, the Royal Ontario Museum will be hosting a workshop "The X-Radiography of Cultural Materials". Located in downtown Toronto, the ROM will welcome Dr. Sonia O'Connor and Tom Sparrow of the University of Bradford, UK, to lead the workshop. The workshop will be presented in lecture and hands-on sessions. Finer points of x-ray theory, how to optimise and evaluate image quality and various special techniques will be explored. X-ray capture topics will focus on digital imaging modalities, evaluation of digital capture systems and image processing (theory and practise). Attendees will move between lecture portions and practical sessions throughout the ROM's x-radiography department. This workshop represents a fundamental opportunity for those practising x-radiography in a cultural or archeological setting, to learn best practice from leaders in the field.

Because attendance is limited, we are requiring a formal application process to assist us in filling the spots fairly and equally (geographically). Note that you will need to provide evidence of training in x-radiography (i.e. current certification that is accepted by applicable regulatory bodies) and we ask you bring your own dosimeter.

The cost of the 3 day workshop is \$750.00 CAD. This cost covers attendance at all lectures and hands-on portions of the workshop, but does not include transportation, accommodation, meals or per diem. Payment is due upon confirmation of attendance.

Interested in attending? Please contact Heidi Sobol for an application via heidis@rom.on.ca. There are a few spots remaining so we hope to hear from you soon!

Aaron Shugar
aaron.shugar@gmail.com
shugaran@buffalostate.edu
<http://flip.it/fCmAhh>

**CONFERENCE ON “SOCIAL DIMENSIONS
OF FOOD IN THE PREHISTORY OF THE
EASTERN BALKANS AND NEIGHBOURING
AREAS”, HEIDELBERG ACADEMY OF
SCIENCES, 30TH APRIL – 2ND MAY 2015**

Please let us draw your attention to the forthcoming Conference of the Heidelberg Academy of Sciences on “Social Dimensions of Food in the Prehistory of the Eastern Balkans and Neighbouring Areas”.

The conference will take place at the Heidelberg Academy of Sciences on 30th April – 2nd May 2015. You can find the conference program via one of the following links:

https://www.academia.edu/11072200/International_Conference_at_the_Heidelberg_Academy_of_Sciences_Social_Dimensions_of_Food_in_the_Prehistory_of_the_Eastern_Balkans_and_Neighbouring_Areas_Heidelberg_30th_April_2nd_May_2015

or

http://www.haw.uni-heidelberg.de/veranstaltungen/programme_2015.de.html

If you would like to take part as a guest at the conference, do not hesitate to contact us:

balkan_food@adw.uni-heidelberg.de

My co-organisers (Maria Ivanova, Bogdan Athanassov, Vanya Petrova, Desislava Takorova) and I are looking forward to meeting you in Heidelberg!

ΕΜΑΕΤ ΕΤΑΙΡΕΙΑ ΜΕΛΕΤΗΣ ΑΡΧΑΙΑΣ
ΕΛΛΗΝΙΚΗΣ ΤΕΧΝΟΛΟΓΙΑΣ - ΕΘΝΙΚΟ
ΜΕΤΣΟΒΙΟ ΠΟΛΥΤΕΧΝΕΙΟ,
ΣΠΟΥΔΑΣΤΗΡΙΟ ΙΣΤΟΡΙΑΣ ΤΗΣ
ΑΡΧΙΤΕΚΤΟΝΙΚΗΣ,
ΠΡΟΓΡΑΜΜΑ ΔΙΑΛΕΞΕΩΝ,
ΑΠΡΙΛΙΟΣ - ΙΟΥΛΙΟΣ 2015

Κάθε **Πέμπτη** απόγευμα στις **19.00'**

Εφόσον δεν υπάρχει άλλη ενημέρωση, οι διαλέξεις θα γίνονται στο **Κτήριο Αβέρωφ αμφιθέατρο 8**

- | | | |
|-------------|------|---|
| 2 Απρ | 2015 | Θωμάς Γεράσιμος, Δρ. Πολιτικός Μηχανικός ΕΜΠ
Ο Ιερός Ναός του Αγίου Μηνά Δρακοπουλάτων
Κεφαλληνίας. Τεκμήριο της πρόσφατης σεισμικής ιστορίας
και της επτανησιακής παράδοσης |
| Αργία Πάσχα | | |
| 23 Απρ | 2015 | Παπαευτυχίου Ιουλία, Δρ. Αρχιτέκτων ΕΜΠ
Ιταλική αρχιτεκτονική του μεσοπολέμου στην πόλη της Κω |
| 30 Απρ | 2015 | Λάββα Ρίβα, Λέκτορας ΕΜΠ
Ο ναός του Αποστόλου Παύλου στο ελληνορθόδοξο κέντρο
Chambesy της Γενεύης |
| 7 Μαΐου | 2015 | Αντωνοπούλου Γεωργία, Δρ. Ιστορικός Τέχνης ΕΚΠΑ
Οι Τρεις Μοίρες στο ταφικό ανάγλυφο του εργαστηρίου
Δρόση. Από τη «γέννηση» των κλασικών έως την «κοίμηση»
των νεότερων χρόνων |
| 14 Μαΐου | 2015 | Πετρίδου Βασιλική, Καθηγήτρια Τμήματος Αρχιτεκτόνων
Πανεπιστημίου Πατρών
Το λήμμα Architecture στο Dictionnaire d'architecture του
Quatremère de Quincy στην Encyclopédie Methodique |
| 21 Μαΐου | 2015 | Πάλλης Γιώργος, Λέκτορας Βυζαντινής Αρχαιολογίας ΕΚΠΑ
Η μεσοβυζαντινή ψευδοσαρκοφάγος από το Ωρολόγι της
Εύβοιας και οι εικονιστικές παραστάσεις της |
| 28 Μαΐου | 2015 | Λώλος Γιάννης, Επίκουρος Καθηγητής ΙΑΚΑ
Τα υδραγωγεία της ελληνιστικής εποχής και η συμβολή τους
στην ιστορία της υδροτεχνολογία |
| 4 Ιουν | 2015 | Κάππας Μιχάλης, Δρ. Αρχαιολόγος
Δυτικές επιδράσεις στην αρχιτεκτονική της Μεσσηνίας (13ος-
15ος αι.) |
| 11 Ιουν | 2015 | Moretti Jean-Charles, Ινστιτούτο Έρευνας για την Αρχαία
Αρχιτεκτονική του CNRS
Η Υπόστυλη Αίθουσα της Δήλου: η ιστορία ενός εργοταξίου
στο τέλος του τρίτου αιώνα π.Χ |
| 18 Ιουν | 2015 | Μαγνήσαλη Μαρία, MSc Αρχιτέκτων ΕΜΠ
Οι στοές του Γυμνασίου της αρχαίας Μεσσήνης. |

Η γραφική αποκατάσταση τους

- | | | |
|---------|------|---|
| 25 Ιουν | 2015 | Σαρηγιάννης Γιώργος, Ομότιμος Καθηγητής ΕΜΠ
Δεσποτόπουλος - Προβελέγγιος - Le Corbusier
και το ιδεολογικό τους πλαίσιο -συνάφειες και συγκρούσεις |
| 2 Ιουλ | 2015 | Γιαννίτσαρης Γιώργος, Επίκουρος Καθηγητής ΕΜΠ
Η μονή Προυσού Ευρυτανίας - Τα κελιά και οι πύργοι |
-

ΘΕΣΕΙΣ ΕΡΓΑΣΙΑΣ/ΥΠΟΤΡΟΦΙΕΣ –
JOB VACANCIES/FELLOWSHIPS

DEPARTMENT OF ARCHAEOLOGY,
CONSERVATION AND HISTORY, POST-
DOCTORAL RESEARCH FELLOWSHIP
WITHIN ARCHAEOLOGY - A
POSTDOCTORAL FELLOWSHIP IN
ARCHAEOLOGY IS AVAILABLE AT THE
DEPARTMENT OF ARCHAEOLOGY,
CONSERVATION AND HISTORY,
UNIVERSITY OF OSLO

The postdoctoral research project must have a focus within isotope analysis, and target a component of Norwegian materials. The project description must address cultural historical interpretation, and be theoretically and methodologically sophisticated in its approach.

The successful applicant is expected to participate in the Department's ongoing research networks, and contribute to the development of the Department's research milieu. Postdoctoral fellowships are primarily aimed at qualifying the holders for senior academic positions.

The position has a duration of 3.5 years. The position will be assigned 25% teaching, supervision and research management, particularly running, maintaining and developing the Department's present laboratory facilities and coordinating with other UiO laboratories.

Requirements

- A doctoral degree (PhD) in archaeology, with a pronounced archaeometric component, or equivalent.
- Practical experience with an isotope laboratory.
- Personal suitability and motivation for the position.

The doctoral dissertation must have been submitted for evaluation before the application deadline.

In the evaluation of the applications, emphasis will be placed on:

- Scientific merit, relevance and innovation of the proposed project.
- The proposed project should incorporate some level of analysis of Norwegian materials. The application must demonstrate a sophisticated level of theoretical and methodological reflection.

- Previous research experience with isotope analysis, and a demonstrated capacity to interpret results from an archaeological perspective.
- The applicant's estimated academic and personal ability to carry out the project within the allotted time frame.
- Documented pedagogical qualifications through education and experience are an advantage.
- Co-operative skills and the ability to participate in academic collaboration within and across disciplines.

Proficiency in English is required for non-native English speakers. Command of a Nordic language is an advantage.

We offer

- Salary level 57-65 (482 800 - 559 600 NOK per year, depending on qualifications)
- A professionally stimulating working environment
- [Attractive welfare benefits](#)

Submissions

Applicants must submit the following attachments with the electronic application form, preferably in pdf format:

- Application letter
- Curriculum Vitae with grades listed
- List of published and unpublished works
- Project description (approximately 3-5 pages). The project description must present a feasible progress plan. It is expected that the applicant will be able to complete the project during the period of appointment

Please note that all documents must be in English or a Scandinavian language.

The short-listed candidates will be invited to an interview at the University of Oslo or we will arrange for an interview on Skype.

See also [Regulations concerning Post-Doctoral Research Fellowships](#).

The University of Oslo has an agreement for all employees, aiming to secure rights to research results a.o.

The University of Oslo aims to achieve a balanced gender composition in the workforce and to recruit people with ethnic minority backgrounds.

Following the Freedom of Information Act (Offentleglova) § 25, Chapter 2, information about the applicant may be used in the public list of applicants even if the applicant opts out from the entry in the public application list.

Region: Oslo
Job type: Contract
Working hours: Full-time
Working days: Day

Application deadline: 7 April 2015
Reference number: 2015/2565
Home page: <http://www.hf.uio.no/iakh/>
Contacts: [Administrativ leder Katrine Randin](#)
Telephone: +47 22 85 67 69
[Professor Christopher Prescott](#)
Telephone: +47 22841908
[Send application](#)



ΑΝΑΚΟΙΝΩΣΕΙΣ - ANNOUNCEMENTS

LES PAPIER JAPONAIS DANS LA RESTAURATION DES COLLECTIONS OCCIDENTALES, 29 ET 30 JUIN 2015, FORMATION CONTINUE - PAPIER JAPONAIS - PROGRAMME ET COÛT D'INSCRIPTION, HAUTE ECOLE ARC, CONSERVATION-RESTAURATION. NEUCHÂTEL, SUISSE

! PROGRAMME EN LIGNE !

[DISPONIBLE ICI](#)

Intervenante : Claude Laroque

Conservatrice-restauratrice d'œuvres graphiques, Maître de conférences de l'Université Paris-1 Panthéon-Sorbonne, responsable de la section Arts graphiques – livre du Master de Conservation-restauration des biens culturels.

Objectif : diffuser auprès de conservateurs-restaurateurs occidentaux des connaissances sur les propriétés de(s) papier(s) japonais et l'emploi qui peut en être fait en restauration d'œuvres occidentales.

Pour toutes informations... +41 32 930 19 19

[PROGRAMME 2015 ICI](#)

Shirley Frick

Collaboratrice administrative

Haute Ecole Arc

Conservation-restauration

Espace de l'Europe 11

CH-2000 Neuchâtel

Tél. +41 32 930 19 19

Tél. direct +41 32 930 19 19

Fax +41 32 930 19 20

Internet www.he-arc.ch

Formation continue Conservation-restauration

conservation-restauration@he-arc.ch

LES PAPIERS JAPONAIS

DANS LA RESTAURATION DES COLLECTIONS OCCIDENTALES

L'objectif de cette formation sera de diffuser auprès de conservateurs-restaurateurs occidentaux des connaissances sur les propriétés de(s) papier(s) japonais et l'emploi qui peut en être fait en restauration d'oeuvres occidentales.

Ce cours de deux jours s'adressera plus particulièrement aux conservateurs-restaurateurs d'objets d'origine archéologique, historique et ethnologique.

Le cours débutera par une présentation des papiers, leurs techniques de fabrication, leurs caractéristiques générales et les propriétés intéressantes pour le conservateur-restaurateur. Il se poursuivra par des exemples et des ateliers pratiques où seront exposés les diverses applications possibles sur des objets en bois, vannerie, cuir, céramiques, verres archéologiques, etc.

Public-cible

Conservateur-restaurateurs : professionnels indépendants ou salariés d'une institution patrimoniale.

Date et lieu

2 jours : **29 et 30 juin 2015**

Espace de la Gare 11, 2000 Neuchâtel (salle et horaire seront communiqués environ 10 jours avant le début du cours).

Intervenantes

Claude Laroque, conservatrice-restauratrice d'oeuvres graphiques, maître de conférences de l'Université Paris-1 Panthéon-Sorbonne, responsable de la section Arts graphiques – livre du Master de Conservation-restauration des biens culturels.

Anouk Gehrig, conservatrice-restauratrice de peinture, enseignante à la HE-Arc en Bachelor de Conservation.

Contenu

Aspects théoriques

- Usage des papiers dans les sociétés extrême orientales
- Bref historique de la papeterie japonaise
- Présentation des principaux matériaux utilisés dans la fabrication des papiers japonais et modes de fabrication
- Propriétés des papiers

- Fabrication et propriétés de la colle d'amidon
- Usages des papiers japonais pour le renforcement, le comblement des lacunes, le moulage, etc.

Exercices pratiques

- Préparation de la colle d'amidon
- Renforcements ponctuels (objets en bois, vannerie, cuir, textiles, etc.)
- Doublage (objets en vannerie, cuir, textiles, etc.)
- Comblement de lacunes (objets en bois, vannerie, cuir, textiles, céramique, verres archéologiques, etc.)
- Moulage temporaire

Examen / Attestation

Le cours ne fait pas l'objet d'un examen, une attestation de fréquentation est délivrée aux participants.

Coût et inscription (facture en chf)

Tarif normal : CHF 750.00

Tarif réduit : CHF 600.00

Joindre la copie de votre carte de membre ICOM ou d'une association professionnelle membre d'ECCO (voir liste <http://www.ecco-eu.org/members/members.html>). Pour les institutions muséales suisses, joindre preuve affiliation à AMS/VMS.

Inscription au moyen du formulaire d'inscription, au plus tard 10 jours avant le début du cours.

Le paiement doit être effectué avant le début du cours.

Les frais de repas, d'hébergement et de déplacement sont non-inclus : ils sont à la charge des participants.

Le coût du menu au restaurant de la HE-Arc varie de CHF 10 à 15.-

Le 1er prix d'une chambre d'hôtel à Neuchâtel est de CHF 90.-

<http://www.neuchatel-tourisme.ch/fr/hebergement/hotels/reservation>

<http://www.booking.com/>

Toute annulation intervenant 10 jours avant la date du cours ne pourra pas faire l'objet d'un remboursement.

ORIENTAL INSTITUTE COLLECTIONS **RESEARCH GRANT**

The Oriental Institute of the University of Chicago is an interdisciplinary research center whose goal is to integrate archaeological, textual, and art historical data to understand the development and functioning of the ancient civilizations of the Near East from the earliest Holocene through the Medieval period.

With more than 300,000 registered objects and many more to be catalogued, the Museum collection at the Oriental Institute is one of the most important resources for research in the world.

The Oriental Institute wishes to provide researchers with financial support to carry out discrete research projects that incorporate the study of artifacts and related archival documents within our museum collections.

This year (2015), through the generosity of Jim Sopranos, one or more Museum Collections Research Grants will be available to researchers. We welcome applications from a wide spectrum of researchers, from those at the graduate student level (i.e. Masters Degree or PhD candidates) to well-established professional researchers in their field of study. Applications are welcome from researchers from all nationalities. Applicants may also include researchers affiliated with the University of Chicago, including the Oriental Institute.

We allow for the broadest possible selection of potential projects that will heighten the level of intellectual discourse and collaboration within the Oriental Institute. Invitations may be made to share research with faculty, staff, and students through informal presentations during the research visit. We encourage use of our online Integrated Database (<https://oi.uchicago.edu/idb/>) and online publications (<https://oi.uchicago.edu/research/pubs/>), and welcome enquiries about our collections (oi-museum@uchicago.edu) in the preparation of applications.

A committee comprised of Oriental Institute faculty members and museum staff will review proposals and may award either a single grant of up to \$10,000, or may opt to provide smaller awards to more than one individual per year. Decisions concerning the outcome of awards will be made and notifications sent to successful applicants in June, with the award made active from July 1st each year. The grant must be fully utilized and completed prior to June 30th of the year following the researcher's notification of a successful application. The expected duration of the research visit is flexible within this period, but must be stipulated in the application.

Other research funds may be used in combination with this grant to increase the duration of a research visit, but must be stipulated (if known) at the time of application. The selection process will take into consideration the quality of research questions and appropriate methodologies, the scope and types of material being studied, the sites, periods, or sub-collections of material, as well as detailing potential requirements for special equipment or scientific analysis of material.

Funding is primarily aimed to help support the costs of travel, accommodation, subsistence, to supplement student salaries, and to cover relevant research costs for the researcher during the appointed period. The grantee will not be appointed an office, desk space, or computer, although access will be provided to our Research Archives (Oriental Institute library) and Collections study areas.

Requirements: Candidates must hold at least a Bachelor's Degree in a field of study. Applications are open to students enrolled in a relevant Master's Degree or Ph.D Program (i.e. graduate student level), as well as to established professional researchers with a University affiliation, researchers within museums, and independent researchers.

Grantees must submit an interim report at the end of their research visit and a final report at the conclusion of their research. Publications resulting from this research grant must acknowledge the grant from the Oriental Institute appropriately, and grantees must provide a digital and/or hard-copy of any publications resulting from their research to the Oriental Institute. Appropriate permissions must be sought for studying unpublished material and images of documents or objects taken during the course of research through consultation with the Museum. Copies of images of Museum documents or objects taken by the grantee during the course of their research will be provided to the Museum for potential inclusion on its Integrated Database.

To apply:

Please send your applications and enquiries by email only to: oi-administration@uchicago.edu including the subject line: "Collections Research Grant" The application must include in one single document (Word or pdf.):

- A cover letter indicating your research interests and suitability for the grant.
- A two page proposal outlining the proposed research topic, collections of interest in the Oriental Institute, duration of project and suggested dates, and relevant publication plans.
- A curriculum vitae (2 pages maximum).
- A budget (1 page maximum), including other grants that may be contributing to this research.
- Contact details for two referees.

Application Deadline: 5pm (US Central Daylight Time), Monday May 4 2015

Please visit the site: <https://oi.uchicago.edu/collections/oriental-institute-collections-research-grant>

CALL FOR NOMINATIONS: SITE PRESERVATION & CONSERVATION AND HERITAGE MANAGEMENT AWARDS

The AIA is seeking nominations for two awards: the Best Practices in Site Preservation and Conservation Award and the Heritage Management Award. Please forward this information to appropriate colleagues.

Best Practices in Site Preservation Award

The Archaeological Institute of America's [Best Practices in Site Preservation Award](#) is presented to a group or project recognized by their peers for doing exemplary work in the field of site preservation and conservation. A \$5,000 grant will be awarded to the winners to further their best practices in site preservation. Award winners will be selected by a committee of professional archaeologists, conservators, and heritage specialists before the AIA's Annual Meeting in January 2016.

Please nominate deserving projects through the nomination form on the AIA's website at <http://www.archaeological.org/sitepreservation/award>. **The deadline for this award is May 1, 2015**; no nominations will be accepted after this date. Early submission is encouraged.

Conservation and Heritage Management Award

The AIA's Conservation and Site Preservation Committee invites nominations for the [Conservation and Heritage Management Award](#). This award is made in recognition of an individual's or institution's exceptional achievement in any of the following areas:

- 1) Archaeological conservation
- 2) Archaeological conservation science
- 3) Archaeological heritage management
- 4) Education/public awareness of archaeological conservation through teaching, lecturing, and exhibition, or a publication.

Please send name(s), a CV, and a substantive statement about the nominee's qualifications for the award to: awards@aia.bu.edu no later than May 1, 2015.

Past Winners

Best Practices in Site Preservation

- 2015 Temple of the Winged Lions Cultural Resource Management – Jordan
2014 California Archaeological Site Stewardship Program - California, USA
2013 George Bey - Kaxil Kiuic, Mexico
Cristina Vidal Lorenzo and
Gaspar Muñoz Cosme - La Blanca, Guatemala
2012 Donald Haggis and Margaret Mook - Azoria, Crete
2011 Giorgio Buccellati - Tell Mozan, Syria
- #### **Conservation and Heritage Management Award**

- 2015 Elizabeth Pye
- 2014 Staffordshire Hoard Conservation Project
- 2013 Sudharshan Seneviratne
- 2012 James R. McCredie
- 2011 Archaeological Conservancy
- 2010 Henry Cleere
- 2009 Heritage Watch
- 2008 Catherine Sease
- 2007 Pointe-à-Callière Musée d'Archéologie et d'Histoire de Montréal
- 2006 Hester A. Davis, Arkansas Archaeological Survey, William Lipe, Washington State University, and Charles R. McGimsey, III, Arkansas Archaeological Survey
- 2005 Parks Canada Agency, les Services d'Archéologie Subaquatique à Agence Parcs Canada, under the direction of its Chief Archaeologist, Robert Grenier
- 2004 Nicholas P. Stanley-Price
- 2002 Wet Organic Archaeological Materials Working Group
- 2001 Museum of London
- 1999 Lawrence J. Majewski
- 1998 Department of Conservation and Materials Science at the Institute of Archaeology, University of London

More information about AIA Awards can be found at: <http://archaeological.org/awards>.
Please feel free to contact me with any questions.

Best wishes,

Samantha

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



EXCAVATION OPPORTUNITY AT IKLAINA

Dear colleagues,

we still have a few open spots for students for the upcoming season of the Iklaina excavation in Pylos. If you know of potentially interested students, please have them contact me off the list.

With many thanks and best wishes,

Michael Cosmopoulos

The Iklaina Excavation is seeking students and volunteers for the 2015 field season (June 15-July 5). Iklaina is a Mycenaean town in the region of Pylos, identified in the Linear B tablets as a-pu2, one of the district capitals of the Hither Province (AJA 2006, pp. 205-228). The project includes excavation, travel to local sites and museums, and evening classes and seminars on Greek culture, history, and archaeology. Students can receive 6 credits through the department of Anthropology at the University of Missouri-St. Louis; volunteers on a non-credit basis are also welcome to apply. Applications will be accepted until the project is filled. All relevant information, including application forms and registration instructions, can be found at the project website, www.iklaina.org.

Michael B. Cosmopoulos, Ph.D.
Fellow, Academy of Science St. Louis
Professor of Archaeology
The Hellenic Government-Karakas Foundation Professor in Greek Studies
Department of Anthropology
University of Missouri
St. Louis, MO. 63121
Tel. (314) 516-6241
Fax (314) 516-7235
www.greekstudies.org
www.greekstudies.org

THESSALONIKI SUMMER SCHOOL 2015: **ANCIENT TECH & CRAFTS**

Dear Colleagues,

Please consult the link below:

<http://www.ihu.edu.gr/index.php/ihu-summer-school-in-ancient-technology-and-crafts-2015.html>

about the 3rd summer school on *Ancient Technology and Crafts* organized again this summer by the International Hellenic University (29/06 – 10/07), Thessaloniki, Greece.

I would be very grateful if you could circulate this information and very glad to receive some of your students.

Best wishes

Anna

Anna Michailidou
Research Director Emerita
Research Centre for Greek and Roman Antiquity
Institute of Historical Research
NATIONAL HELLENIC RESEARCH FOUNDATION
Vassileos Constantinou 48, 11635 Athens, Greece
Tel. +30-210-7273684
+30-210-3620752
FAX: +30-210-7234145
email: amihail@eie.gr

CONTINUING EDUCATION
CONSERVATION-RESTAURATION, HAUTE
ECOLE ARC, CONSERVATION-
RESTAURATION, NEUCHÂTEL, SUISSE,
PROCHAINS COURS – NÄCHSTE KURSEN –
NEXT COURSES

AVRIL 2015

[UN NOUVEAU PINCEAU ÉLECTROLYTIQUE / A NEW ELECTROCHEMICAL PENCIL](#)

JUIN 2015

[INTRODUCTION À LA MANIPULATION ET AU DÉPLACEMENT DES BIENS CULTURELS, NIVEAU 1](#)

[LES PAPIERS JAPONAIS DANS LA RESTAURATION DES COLLECTIONS OCCIDENTALES](#)

SEPTEMBRE 2015

[INTERVENTIONS DE SAUVETAGE DES BIENS CULTURELS EN CAS DE SINISTRE](#)

PROGRAMME 2015 : [PROGRAMME DE FORMATION CONTINUE](#)

Shirley Frick

Collaboratrice administrative

Haute Ecole Arc

Conservation-restauration

Espace de l'Europe 11

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SATELLITE IMAGING OF CULTURAL SITES IN CONFLICT: A CAUTIONARY NOTE

Visual data about cultural heritage sites within conflict zones in near real-time has become possible with new technology, particularly satellite imagery. Sensitive information can result from analysis of publically accessible high-resolution commercial products. Researchers and others using this type of information-gathering in sensitive and volatile situations, such as the current conflict in Iraq, face ethical questions related to the public disclosure of such information. They must also consider the technical limitations of satellite technology in analysis.

In order to address these concerns in other sensitive settings, the humanitarian community has established a number of ethical guidelines for action in conflict environments. Foremost among these standards is the Sphere Project's Humanitarian Charter and Minimum Standards in Humanitarian Response. Following these guidelines, all parties should consider the following questions at a minimum, particularly concerning cultural site analysis in Iraq, and when weighing the impact of disclosing research findings:

“What does the affected population gain by our activities?”

“What might be the unintended negative consequences of our activities for people's security, and how can we avoid or minimise these consequences?”

“Do the activities take into consideration possible protection threats facing the affected population? Might they undermine people's own efforts to protect themselves?”

“Could the activities inadvertently empower or strengthen the position of armed groups or other actors?”

The International Committee of the Red Cross (ICRC) has also noted that:

“Protection actors ... must analyse the different potential risks linked to the collection, sharing or public display of the information and adapt the way they collect, manage and publicly release the information accordingly.”

“Protection actors should be explicit as to the level of reliability and accuracy of information they use or share.”

For these reasons, the limitations of the technology must be communicated clearly. High-resolution satellite imagery has a maximum resolution of 30cm per pixel, thus the smallest object visible must be 30cm by 30cm; to be recognizable it must be significantly larger.

Objects that do not meet this size requirement may appear undamaged in satellite imagery. Moreover, portions of sites may be under cover, rendering them invisible to satellites. Consequently, reports of damage may be unverifiable using satellite technology alone.

Taking into account these considerations, extreme caution is urged when using satellite imagery to corroborate on-the-ground or media-reported damage to cultural heritage sites.

For further reading:

ICRC. 2013. Professional Standards for Protection Work Carried Out by Humanitarian and Human Rights Actors in Armed Conflict and Other Situations of Violence.

<https://www.icrc.org/eng/resources/documents/publication/p0999.htm>

Sphere Project. 2010. Humanitarian Charter and Minimum Standards in Humanitarian Response. <http://www.spherehandbook.org/>

Please visit the site: <http://aaas.org/geotech/culturalheritage/caution>

**MASTER OF SCIENCE IN: CULTURAL
HERITAGE MATERIALS & TECHNOLOGIES,
UNIVERSITY OF THE PELOPONNESE,
KALAMATA, GREECE**

COURSES:

Semester A (October - January)

A1 Landscape Archaeology and Cultural Heritage Management. Introduction to Landscape Archaeology, Natural and Cultural Landscape Formation Processes, Procedures and Methods, Interpreting Cultural Landscape, Excavating Space and Place, Anthropology and Management of Cultural Goods, Senses Revisited: Touch, Tactility, Haptics, Physical Catastrophe and the Archaeology of the Present, Sustainable Heritage Management, Interpreting Heritage

A2 Archaeometry I: Approaches for Archaeology and Cultural Heritage. Studies on Archaeological and Geo-Archaeological Materials (Pottery, Glasses, Stones, Mortars, Metals, Organics): Production, Technology, Use and Provenance. Absolute Dating in Archaeology and Cultural Heritage, Statistical Evaluation of Analytical Data/Chemometrics.

A3 Archaeometry II: Non-Destructive and Innovative Methodologies for Cultural Heritage. X-Ray Fluorescence Analysis, Portable and Handheld XRF Analyzers, Micro-XRF Analysis of Ancient Metal Alloys, In-situ XRF Analysis of Ancient Pigments and Wall Paintings, Synchrotron Radiation Techniques, Analytical Applications and Advanced Topics to Ion Beam Technology, Spectroscopic and Laser Analytical Techniques in Cultural Heritage Materials Analysis, UV-Vis-IR, Imaging and Spectroscopy Techniques.

A4 Laboratory Practices: Use of Laboratory and Portable Instrumentation. Stereo Microscope, FOM, Petrography Microscopy, RAMAN, SEM, XRF.

Semester B (February – May)

B1 Environmental and Remote Studies for Cultural Heritage. Geoarchaeology and Geochronology, Isotopic Studies, basics of environmental Chemistry and Physics, societal and cultural dimension of climate variability, impacts of air pollution on cultural heritage, introduction to environmental measurements and techniques, climate change, vulnerability of cultural heritage to climate change impacts, climate and weather.

B2 Information Communication Technologies for Cultural Heritage. Overview, Cyber Archaeology /Archaeometry, Enhancement of Visitor Experience, Visitor Requirements, Digital Presence, Multimedia Applications, Digitalization and Management, E-Research, Synergies, Cultural Heritage in the City, Building on Existing Technologies.

B3 Field Prospection and Computing Technologies for Cultural Heritage. Field Prospection Techniques, Procedures and Applications, GIS, UAV for Cultural Heritage, Monitoring Cultural Heritage from Space, Data, Information Visualization for the Environment, Reconstructing Archaeological Objects and Sites, Structural Modelling of Archaeological Materials.

B4 Computing Practices: GIS, Statistical Analysis and Computing Aided Applications. GIS, Statistical Evaluation of Analytical Data, Designing Multimedia Applications, E-Research and Management, Visualisation and Modelling Practices.

Dissertation (June – September)

All courses provide 60 ECTS and the dissertation is credited with 30 ECTS. Total MSc Credits: 90 ECTS.

REQUIREMENTS:

The MSc programme is mainly addressed to graduates of schools of heritage conservation, archaeology, cultural heritage, material science and engineering. Graduates of similar or relevant fields are also welcome to apply.

MINIMUM REQUIREMENTS FOR CANDIDATES - Overall degree of Upper Second Class or above. - Academic IELTS of overall band score 6 or above.

FEES:

The total cost of fees for all students will amount to 4000 €, which will be paid in two installments. The first instalment must be paid upon acceptance to the programme and the second instalment at the beginning of Semester B.

Scholarships covering half the amount of the total fees will be awarded to the top-scoring students, based on their overall academic record of Semester A.

Director of graduate studies

Nikos Zacharias : Associate Professor (University of the Peloponnese)

Coordinators

Maria Xanthopoulou (Course A1): Assistant Professor (University of the Peloponnese)

Vasilis Kilikoglou (Course A2): Research Director (NCSR Demokritos)

Andreas Karydas (Course A3): Senior Researcher (NCSR Demokritos)

Evangelos Gerasopoulos (Course B1): Research Director (National Observatory of Athens)

Dr. Angeliki Antoniou (Course B2): Academic Laboratory Teaching Staff (University of the Peloponnese)

Nikos Platis (Course B3): Lecturer (University of the Peloponnese)

Lecturers

Demetrios Anglos: Associate Professor (University of Crete)

Emilia Banou: Assistant Professor (University of the Peloponnese)

Stamatis Boyatzis: Assistant Professor (TEI of Athens)

Hariklia Brecolaki: Assistant Researcher (National Hellenic Research Foundation)

Yorgos Facorellis: Assistant Professor (TEI of Athens)

Dimitra Founda: Senior Researcher (National Observatory of Athens)

Christos Giannakopoulos: Research Director (National Observatory of Athens)

Sotirios Harissopoulos: Senior Researcher (NCSR Demokritos)

Anno Hein: Senior Researcher (NCSR Demokritos)

Dr. Aphrodite Kamara: (Time Heritage LTD.)

Dr. Vasiliki Kantarelou: (NCSR Demokritos)

Dr. George Karagiannis: (Ormylia Art Diagnosis Center)

Dr. Ioannis Karatasios: (NCSR Demokritos)

Iphigenia Keramitsoglou: Senior Researcher (National Observatory of Athens)

Maria Kouri: Lecturer (University of the Peloponnese)

Tasos Lagoyiannis: Senior Researcher (NCSR Demokritos)

Eleni Liakakou: Assistant Researcher (National Observatory of Athens)

Ioannis Liritzis: Professor (University of the Aegean)

Ioannis Maniatis: Research Director (NCSR Demokritos)

Nikolaos Mihalopoulos: Professor (National Observatory of Athens)
C. Nadia Seremetakis: Associate Professor (University of the Peloponnese)
Dr. Charilaos Tselios: (Ministry of Culture)
Dr. Yorgos Tzedopoulos: (National and Kapodistrian University of Athens)
Gregory Tsokas: Professor (Aristotle University of Thessaloniki)
Eleni Zimi: Assistant Professor (University of the Peloponnese)
Evangelia Kyriazi: Doctorate Researcher
George Malaperdas: Doctorate Researcher
Eleni Palamara: Doctorate Researcher
Vasiliki Valantou: Laboratory Assistant

Associates

(University of the Peloponnese)

Evangelia Kyriazi: Doctorate Researcher
George Malaperdas: Doctorate Researcher
Eleni Palamara: Doctorate Researcher
Vasiliki Valantou: Laboratory Assistant

LIVING IN KALAMATA:

Kalamata, the second-largest city in the Peloponnese, is situated at the centre of the Messinian Bay and at the foot of the imposing Mount Taygetos. It is unique for its Mediterranean climate, beautiful landscape and close proximity to significant archaeological and tourist centres, such as Pylos.

Kalamata is a remarkably cultural, vibrant and gastronomic city. About 10% of the city's population (80,000) are students registered at the two higher educational institutions placed at the city:

The University of Peloponnese and the Technical Educational Institute of Peloponnese. The city offers a vast variety of cultural and sport activities, as well as nightlife options. Kalamata is also known as the national capital of modern dance, hosting annually the International Dance Festival.

Getting around

Kalamata enjoys great pedestrian and cyclist infrastructure, making walking and cycling the best ways of getting around.

Local Buses run frequent services between the city centre and the sea front. The fare costs 1 euro. Tickets can be purchased at kiosks or inside the bus.

CultTech

Studies on the interdisciplinary field of Cultural Heritage and Science/Technology offer the great potential of a modern and balanced educational syllabus; they also produce an ideal platform for holistic approaches that are guaranteed by the creative mixing of up-to-date methodologies with archaeological science, archaeometry and cultural heritage technologies.

CultTech operates within the Peloponnese, an advanced natural and cultural environment that hosts plethora of historical, archaeological sites and monuments. A key issue for **CultTech** is its orientation towards hands-on research thus offering post-

graduate research training and the potential of the implementation of a diploma dissertation closely related or within ongoing research projects. Students from the fields of archaeology, cultural heritage management, conservation, materials science and engineering are welcomed to apply.

The programme will take place in Kalamata, Greece.

Applications are welcomed from March to May, while the courses start on October 1st, 2015.

<http://culttech.uop.gr>

CultTech

Contact email: culttech@uop.gr
Tel: (0030) 27210 65145

**ANNUAL SUMMER SCHOOL IN
ARCHAEO-METALLURGY, INSTITUTE FOR
ARCHAEO-METALLURGICAL STUDIES
(IAMS), 29 JUNE-10 JULY, UCL, LONDON**

Dear all,

We would like to invite you to the annual **Summer School in Archaeometallurgy**, organised by the Institute for Archaeo-Metallurgical Studies (IAMS), which will take place from 29 June to 10 July at UCL, London.

The first week will be devoted to bloomery iron smelting, and will include seminars and handling sessions as well as an experimental iron smelting campaign. The second week will cover the field archaeology of mining and smelting as well as introductions to the scientific analysis of archaeological metal objects.

Tutors will include **Brigitte Cech, Michael Charlton, Jake Keen** and **Marcos Martín-Torres**. Programme and registration details are available on www.ucl.ac.uk/iams

Please note that registration is essential; places are limited and typically oversubscribed!

With best wishes,

The IAMS team

THE 2016-2017 CORE FULBRIGHT U.S. SCHOLAR PROGRAM COMPETITION IS NOW OPEN

The Fulbright Scholar Program offers teaching, research or combination teaching/research awards in over 125 countries for the 2016-2017 academic year. Opportunities are available for college and university faculty and administrators as well as for professionals, artists, journalists, scientists, lawyers, independent scholars and many others.

Of the nearly 600 awards being offered this year, currently there are some **27** awards available in the field of archaeology. Moreover, there are **369** All Discipline awards that welcome teaching and/or research proposals in this field and others, including interdisciplinary projects. These awards are offered in various regions around the world. [Click here to view awards available to scholars of archaeology.](#)

In addition to several new program models designed to meet the changing needs of U.S. academics and professionals, Fulbright will be offering more opportunities for multi-country grants through enhanced global and regional awards.

Interested faculty and professionals are encouraged to learn more about core Fulbright U.S. Scholar opportunities by visiting the online [Catalog of Awards](#) or by participating in one of our webinars.

The application deadline for most awards is August 3, 2015. U.S. citizenship is required. For other eligibility requirements and more program information, please [visit our website](#) or contact us at scholars@ie.org.

The Fulbright Program, sponsored by the U.S. Department of State's Bureau of Educational and Cultural Affairs, is the U.S. government's flagship international exchange program and is supported by the people of the United States and partner countries around the world. For more information, visit eca.state.gov/fulbright.

INTERNET SITES

MINOAN EXPERIMENTAL HOUSE

Dear friends,

for all those of you who have been wondering how the development of our plans for a historical landscape park (containing many Minoan sites with big ruins) is going on and what we did recently, have a look at: <http://youtu.be/akeKz-5vQV4>

for a small video (Greek with English subtitles) of how we built a reconstruction of a small Minoan mountain house (as a basis for the "final" reconstruction installment we are planning for the park...)

This is just a beginning, but we are learning a lot on the way!

If anybody is interested in details: you are welcome to drop by and have a direct look. And naturally all suggestions are welcome, too!

With my warm greetings from Lakonia, Crete

Sabine Beckmann

Sabine Beckmann, PhD
University of Crete post-doc
www.kroustas-park.gr

HISTORICAL AND MASONRY STRUCTURES: **NEW WEBSITE**

Dear Colleague,

The Historical and Masonry Structures (HMS) from University of Minho has a new website: <http://www.hms.civil.uminho.pt/>

In the new website you will find information about the research team of HMS, its research projects and facilities. You may also find and download various publications such as several papers, conference proceedings, PhD theses and many more.

We invite you to visit our website and to keep up with what is going with us.

Best regards,

Paulo B. Lourenço

ONLINE LECTURE ON ANCIENT STORAGE TECHNIQUES

The American School of Classical Studies at Athens is presenting a series of lectures in live streaming video from here:

<http://goo.gl/eP4Cbj>

It includes one that may be of interest to this list, 'Testing Aegean Storage Strategies and Practices from Pots to Walls in Minoan and Mycenaean Contexts', at 1700 Greek time on 16 March -- that is, 1500 in Britain and 1100 in New York -- see this converter for other times zones:

<http://goo.gl/7jndLY>

For a complete list of lectures, see:

<http://goo.gl/eQiLHE>

RH

BOTANY IN ANCIENT EGYPT - PART 1

During my research into the Materia Medica collection (plant, animal and mineral based medicines used in from the 1800s) at the Manchester Museum, I have notice a recurring feature; many of the plants had in fact been used by humans for thousands of years and a large portion of these by the ancient Egyptians!

Plants featured heavily in Egyptian culture: in food, medicine, religion, perfumes and beyond. Early medicinal texts, such as the Ebers Papyrus from 1550 BCE, provide detailed insight into their extensive herbal knowledge. Unfortunately no complete record has yet to be found, but the fragments that have survived show just how knowledgeable these ancient peoples were when it came to plants and their uses. Many of the applications documented are the same used right up until the introduction of modern medicinal practices. Even today, large portions of herbal remedies used as 'alternative' medicines feature plants used for similar purposes as those used by the ancient Egyptians.

Not all of the plants known to and used by the Egyptians were native to their homeland. Their extensive knowledge on the topic can partly be attributed to trade.

Caravan and water routes connected Egypt to trade routes around the world, allowing the exchange of tradable items like spices and fabrics. Silk traded from China has been found on Egyptian mummies dating from around 1000 BCE. As well as the benefit of trade, this connection to the rest of the world also made it possible for botanical knowledge to spread to Egypt from distant countries like China and India.

Another notable factor that played a role in the vast accumulation of plant knowledge was that the Pharaoh's actively sent out plant exploration parties. These parties, such as those sent by Queen Hatshepsut around 1500 BCE and by Pharaoh Sankhere in 2500 BCE, were sent to discover more plant resources that could be exploited.

There is one particular Pharaoh that is worth mentioning in regard to the mass accumulation of botanical knowledge in Egypt: Thutmose III. He was an 18th dynasty Pharaoh who reigned between 1479-1425 BCE (part of which was as co-regent with Queen Hatshepsut). During his rule, Thutmose led numerous military expeditions, from which many foreign plants and animals were brought to Egypt.

It was during his reign that the 'Botanical Garden' was erected in the temple of Akh-menu at Karnak. This 'garden' is a chamber whose walls depict carved representations of the plants and animals collected by Thutmose. Because of its physical isolation from the rest of the temple, the 'Botanical Garden' of Akh-menu is a particularly sacred chamber and believed to be the place in which the priests of the god Amun were initiated.

Please visit the site:

<https://herbologymanchester.wordpress.com/2015/03/17/botany-in-ancient-egypt-part-1/>

ΝΕΕΣ ΕΚΔΟΣΕΙΣ – NEW PUBLICATIONS
UNDERSTANDING STANDARDIZATION AND
VARIATION IN MEDITERRANEAN
CERAMICS: MID 2ND TO LATE 1ST
MILLENNIUM BC

Bryn Mawr Classical Review 2015.03.08

Antonis Kotsonas (ed.), *Understanding Standardization and Variation in Mediterranean Ceramics: Mid 2nd to late 1st millennium BC*. Babesch supplements, 25. Leuven; Paris; Walpole, MA: Peeters, 2014. Pp. vii, 196. ISBN 9789042930919. €87.00 (pb).

Reviewed by Patrick M. Thomas, University of Evansville (pt4@evansville.edu) Table of Contents

Most of the papers published here were first presented at a session of the 16th Annual Meeting of the European Association of Archaeologists in 2010, although three were solicited by the editor from non-participants, with the explicit goal of broadening the scope of the volume. One of the strengths of this collection is in fact its broad chronological range, extending from the Middle Bronze Age to the Hellenistic period. Although most of the papers are connected in some way with Greek archaeology, two deal with non-Greek ceramics (Phoenician and Iberian), and two others focus on hybridized or peripheral wares (Mycenaean pottery in southern Italy and Anatolia, and the North Aegean G 2-3 ware). Some of the papers analyze large assemblages from a number of sites, while others examine smaller ones from particular sites; some authors are concerned primarily with issues relating to production, others to consumption/usage, and others examine both. Familiar metrological approaches are employed in a number of papers, but many of the contributors also (or instead) advocate other methodologies. In particular, the concept of the chaîne opératoire is appealed to in a number of papers concerning production. Most of the authors explicitly address the difficulties involved in defining standardization or of recognizing it in assemblages that may have been produced by many individuals over an extended period of time. Readers anticipating (or perhaps fearing) a great deal of complex statistical analysis will not find it here; all of the contributions should be understandable by anyone with a modest background in archaeological ceramics. All of the papers are in English, and the volume has been handsomely produced, with many high-quality illustrations and helpful charts and tables.

The volume begins with two papers by the editor, A. Kotsonas. The first briefly examines the history of standardization studies and outlines the papers presented in this volume. The second considers the question of what is meant by “standardization” and outlines some of the methodologies available for investigating it. Kotsonas perhaps belabors the point that standardization is a relative concept and that it is unreasonable to expect to find in ancient ceramics the kind of consistency observed in modern, mass-produced, industrial products, but his comments lay the groundwork for arguments developed in some of the papers, that items dissimilar in some of their attributes may be standardized

in others. The combined bibliographies for these two papers will be useful for those trying to acquaint themselves with the range of standardization issues.

The contribution of J. Hilditch centers on an analysis of the manufacture of conical cups and ledge-rim bowls of Minoan style from Akrotiri on Thera. Production chaînes opératoires are established for locally made ledge-rim bowls, cooking pots, handled cups, and jugs during Phase C there. The ledge-rim bowl is the only local shape that shows evidence of the use of rotational kinetic energy from a potter's wheel. LC I conical cups from Thera likewise show evidence of the use of the potter's wheel, and Hilditch argues that the mode of manufacture was as important as the shape itself in establishing its "Minoanness."

A. Esposito and J. Zurbach examine locally produced Mycenaean pottery from Miletus and the region of Sybaris in Southern Italy. This provides case studies of how producers of a culturally exotic product interacted both with local consumers and indigenous manufacturing traditions. Their research has demonstrated that the "Anatolian" red-washed imitations of kylikes and carinated cups found at Miletus during LH IIIA2 were not in fact imported from inland Anatolian sites, but locally produced alongside normal Mycenaean pottery. There is no evidence from household deposits that these two styles are the result of "Anatolian" and "Mycenaean" consumers desiring differently decorated pottery. Within the plain of Sybaris, a complex interchange of Mycenaean technologies, shapes, and decoration, reflecting ongoing contact with the Aegean, and local preferences is seen.

J. Hruby considers standardization in the large assemblage of pots from the Mycenaean palace at Pylos. She observes that although much of the unpainted wheelmade pottery found in Rooms 18-22 was probably made by the same potter, based on both preserved fingerprints and consistency of production process, the pots exhibit an unexpectedly high degree of variation. Hruby believes that this is best explained by the potter working at high speed, as is indicated by corkscrew spiraling on interiors, warped rims, pre-firing defects such as tears, and slumping of lower bodies on open shapes.

Studies of standardization in Phoenician pottery are rare, so F.J. Núñez Calvo's contribution is especially welcome. He investigates cinerary urns and accompanying vessels from the cemetery of al-Bass at Tyre, dating from roughly 900 to 600 BC. Most graves included an amphoroid krater as an urn, along with jugs and drinking vessels. The author provides a metrological study of the amphoroid krater urns, concluding that they exhibit a relatively high degree of standardization, with coefficients of variation on different measurements ranging between 10 and 15% over the entire time, although only Period IV provides enough examples to be considered on its own. Some of the tables in this paper are somewhat misleading in their apparent precision: percentages are often given down to hundredths of a percent, when the actual number of examples under consideration is less than one hundred and, in one case (Table 8b), only nine. The shades of gray used in some of the bar graphs to indicate different types or attributes are sometimes not easy to differentiate.

P. Ilieva considers G 2-3 ware, a pale fine ware typically decorated with lustrous brown or reddish brown paint and dating to the first half of the seventh century BC. It takes its odd name from the grid square at Troy where it was first identified in quantity, but it is widely distributed over the islands and coast of the northern Aegean. Ilieva argues that G

2-3 ware was probably made in many workshops in this area; its homogeneous appearance is the result of a similar chaîne opératoire in preparing the clay, employing a limited range of shapes and motifs, and in firing. Numerous peculiarities at individual sites argue strongly against the idea of production centralized at only a few places.

F. Pérez Lambán, J. Fanlo Loras, J.V. Picazo Milán, and J.M. Rodanés Vicente report on standardization in handmade pottery from houses at Cabezo de la Cruz in northeastern Spain, a site dating to the Iberian Early Iron Age, ca. 800-550 BC. The study focuses on conical plates and so-called “necked vases,” small jars with a nearly vertical neck and very slight lip. The authors argue that households produced their own pottery, based on contrasting characteristics seen in vessels from different households. A potential problem here is that the number of vessels from houses other than House 7 is very small, although the observations of the authors are reasonable. The necked vases from House 7 exhibit small coefficients of variation in both height and rim diameter; the authors suggest that the smallest size of this shape is a base measure of volume (ca. 0.25 l), and larger examples occur in multiples of this number. The authors concede that additional research will be needed to ascertain whether this volume was a common measure in the region, but material from Cabezo Murrudo supports their tentative conclusion. The possibility that the necked vase was used for wine consumption is considered at the end of the paper.

V. Stissi explores some general perspectives on standardization, as applied to a range of Archaic through Hellenistic Greek pottery types. Stissi notes that Greek pottery was produced in a very uniform manner over much of the Greek world; similarly, households around any given time tended to acquire and use the same sorts of vessels. Although there seems to be good evidence that Greek potters were capable of making very highly standardized pots in terms of both shape and decoration, it does not appear that the creation of many identical copies was a goal. Greek consumers seem to have balanced considerations for a basically uniform set of vessel types with what happened to be in fashion within each type, but they do not seem to have valued sets of identical vessels within their households. Stissi observes that the avoidance of strict repetition is a common characteristic in much of Greek culture.

A. Smith focuses on the pelikai attributed to the Pan Painter, a red-figure Athenian mannerist of the Early Classical period. She reviews the formal characteristics employed to recognize the hand of this pot painter. Pelikai attributed to him fall into three different size groups, of which Smith is particularly interested in the smallest, since these exhibit a less controlled and more casual style than his other works. It is suggested that this might have been the result of the painter undertaking what amounts to a commission from a workshop for a set of similarly sized pelikai.

Also working within the same general time-frame, K. Volioti investigates differential sizes of so-called “Haimonian” Attic black-figured lekythoi of the Late Archaic and Early Classical periods, ca. 500-450 BC. By “Haimonian,” the author is referring not only to vessels decorated by the Haimon Painter, but to a large group of similarly shaped and decorated lekythoi. Volioti employed 600 of the approximately 2000 known examples of this vase type for her study. The vessels were divided into three phases (early [35.5%], middle [37%], and late [27.5%]), using a shape typology advanced earlier by U. Knigge. The author discerns three basic sizes among these vessels, but only a medium and large size are very distinct within the first two phases, and a small and a medium size in the third phase. There is a very strong tendency for the height of the

lekythoi to be around three times the maximum diameter, which is typically at the shoulder. The extreme fineness of the bins (0.1 cm) used by Volioti in her analysis and graphs is a concern. For a typical vessel of medium size, around 16 cm, this would be well under 1% of the height. The author obtained many of her dimensions from published sources, so there is a question of consistency and accuracy. Volioti acknowledges this, but it seems clear from her bar diagrams (especially Graphs 1 and 2) that some measurers were working at best only to the nearest 0.5 cm, as the extreme peaks on those intervals seem to indicate. Graphed as they are, her hypothesized sizes are visible, but one might also see a right-skewed normal distribution for the early and middle phases. Subjecting this data at least to a Shapiro-Wilk test for normality might be a good idea. Volioti's analysis also suggests that certain regions had preferences for differently sized lekythoi. She notes as well that there is no reason to believe the lekythoi were not functional vases, as has been sometimes suggested. In fact, a back-of-the-envelope calculation treating the body portions (usually about 60% of the total height) below the necks as a simple cylinder indicates that her three suggested height sizes (ca. 13, 16-17, and 19-20 cm) would yield effective capacities in an approximately 1:2:3 ratio.

The final paper, by C. Beestman-Kruyshaar, reports on variability within groups of late Classical and Hellenistic drinking vessels, especially kantharoi, from Halos in Thessaly. The author argues against allowing ideas concerning the Greek symposium to dominate interpretation of domestic assemblages. At Halos, based on the relative infrequency of plain or coarseware cups, Beestman-Kruyshaar argues that decorated fineware kantharoi were probably used in a variety of social contexts, and even for everyday use, not only formal occasions.

The strength of this collection of papers is the variety of approaches to different aspects of standardization and their application to quite different ceramic assemblages. Although some of the papers could be improved and extended in future work by the application of more complex statistical techniques or more justification of the ones employed, all of the authors provide thoughtful and reasonable analyses. Most ceramic specialists will find something of interest in this book.

Please visit the site: <http://bmcr.brynmawr.edu/2015/2015-03-08.html>

APPROACHING THE ANCIENT ARTIFACT: REPRESENTATION, NARRATIVE, AND FUNCTION

Bryn Mawr Classical Review 2015.03.12

Amalia Avramidou, Denise Demetriou (ed.), *Approaching the Ancient Artifact: Representation, Narrative, and Function*. A Festschrift in honor of H. Alan Shapiro. Berlin; Boston: De Gruyter, 2014. Pp. xxv, 590. ISBN 9783110308730. €149.95.

Reviewed by Sheramy D. Bundrick, University of South Florida St. Petersburg (bundrick@usfsp.edu) [Table of Contents](#)

Anyone who researches ancient Greek iconography—especially the iconography of Athenian vases—owes a debt of gratitude to Alan Shapiro, not only for his prolific scholarship spanning a wealth of topics, but, if one has been fortunate to interact with him personally, for his generosity of spirit.¹ The Festschrift under review, edited and presented by two of Shapiro’s former students in honor of his sixty-fifth birthday, celebrates both aspects and assembles forty essays by many of his colleagues, students, and friends. The result is a thought-provoking collection of work that pays homage to Shapiro’s achievements while building upon them. Due to space considerations, this review cannot consider every paper, but instead will comment upon the volume’s overall scope and single out individual contributions when feasible (with no reflection on those left unmentioned).

In the Foreword, Avramidou and Demetriou state their goal of a “multifaceted and interdisciplinary approach” to ancient artifacts: “an investigation of the nature of the links between text and image, and innovative readings of narrative scenes on pottery, sculpture, and texts” (xvii). Despite Shapiro’s own proclivities, the Festschrift does not concern Athenian art alone, but as the editors further note, adopts a “comparative perspective, transgressing regional, chronological, and cultural boundaries that usually confine scholarship in the field” (xvii). Thus one finds papers not only about Greek, but also Etruscan and Roman art, and not only vase painting, but sculpture of various sorts, metalwork, and other media. Two papers by Deborah Lyons and Claudia Zatta analyze textual passages, from Herodotus and Aristotle respectively, while Brian Rose’s paper pushes the limits of the volume’s themes the most by melding his discussion of Roman political imagery with political imagery in the modern world.

The Festschrift’s five subdivisions take their titles and themes from some of Shapiro’s best-known publications. The first section, “Myth Into Art,” contains papers that undertake iconological analyses in a fashion well observed in Shapiro’s own work, whether examining a single object (e.g., Tyler Jo Smith on a column krater formerly in the Castle Ashby collection and Mario Iozzo on a previously unpublished kylix discovered in nineteenth-century Tuscany) and/or an iconographic motif in detail (e.g., Beth Cohen on the depiction of dropped objects). Both here and in essays elsewhere in the volume, emphasis is often placed on the interaction between image and text—although eschewing the *Bild und Lied* model that Shapiro and others have demonstrated is outdated—while many papers propose reevaluation of old interpretations. Thus

Michael Padgett suggests that some scenes on Attic vases previously thought to represent Herakles and the Hydra may instead show Herakles fighting Ladon in the Garden of the Hesperides, while Heide Mommsen urges reconsideration of the character of Triton, whom she suggests was more a force of nature than a true “monster.”

The second section, “Iconography of Mourning,” focuses on funerary art and iconography, while the third, “Art and Cult,” concentrates upon religious themes and contexts. Papers in both sections consider artifacts and images as reflections of societal beliefs and practices but, again in the style of Shapiro and of contemporary iconographic analysis generally, without treating them as photographic documents. The papers of Judith Barringer and Wendy Closterman build upon the foundation established by Shapiro in his classic “Iconography of Mourning” article of 1991,² Barringer discussing so-called warrior *loutrophoroi* and their possible relation to the demotion *sema*, Closterman focusing on women as producers and givers of funerary gifts, especially textiles. Nassi Malagardis provides welcome publication of black-figured skyphoi dedicated at the Sanctuary of the Nymph on the Acropolis slope; we all wait patiently for full publication of this key site. Indeed, the Acropolis is never far away in this part of the volume. Olga Palagia, for instance, uses two Hellenistic Panathenaic amphorae as an entrée to discuss the cult of the Graces on the hill, with this reader hoping for more work to come on this topic. Two papers ponder the thorny relationship between Dionysian imagery and “real” Athenian ritual: Guy Hedreen revisiting sculpted images of the god as shown on vases, and Allison Surtees confronting themes of transvestites and transgression. The so-called *Lenaia* scenes with women celebrating around an “idol” of Dionysos present a particular puzzle given that most vases with this subject were painted on *stamnoi* and exported to Etruria or Campania; Hedreen does not address the question of the export market (for that matter, neither does Surtees with the many so-called *Anakreontic* scenes) and instead argues that these sorts of representations evoke Athenian “primitive life” (268).³ The fluidity of the categories of “myth” and “daily life” in ancient imagery is rightly emphasized in these papers and elsewhere in the volume. Not all the papers in these sections concern Greek art and ritual; Dietrich Boschung and John Oakley both bring Roman funerary art into the conversation. Oakley’s contribution blends iconographic discussion of Roman sarcophagi in the Toledo Museum of Art with an account of their wanderings through old collections before landing in their new home—an example of recent interest in the modern reception of classical art. If only objects could speak, indeed!

“Courtship Scenes” on Athenian vases are represented by a quartet of papers in their own section, appropriately so given the continued impact of Shapiro’s 1981 article on the subject.⁴ Each offers discussion of a lesser-known object—a particular contribution of the entire volume, in fact, as it seems many contributors made this a goal. Three of these papers (by Dyfri Williams, Jenifer Neils, and Robert Sutton) further focus on objects in American university collections, which is especially welcome. Neils places a red-figured *pelike* with a scene of Eros catching a hare (attributed to the Tyskiewicz Painter and now at the Wilcox Classical Museum of the University of Kansas) into a larger iconographic context, while Sutton introduces a black-figured amphora with courting scene now at Bryn Mawr College. Adrienne-Lezzi Hafter publishes for the first time a Meidian *pelike* from a private collection, but in an essay that seems too brief for the richness of the vase. She is careful to note that although previously unpublished, the vase “was legally exported to Switzerland in the late 1960s” (336, n. 7). Other essays in the volume include

provenance information when relevant and conform to the publication standards of the Archaeological Institute of America, even though this intent is not stated outright.

The *Festschrift*'s final section, more of a catch-all than the rest, gathers an assortment of papers under the umbrella of "Narrative Strategies" (including those noted above by Lyons, Zatta, and Rose). J. Robert Guy asks the reader to consider "why style matters" with an essay that blends iconographic analysis and connoisseurship in the reconsideration of a group of red-figured volute krater fragments, while Jasper Gaunt continues the theme of volute kraters by highlighting the role of metal vessels as emblems of status. His suggestion that Attic figured pottery may owe its storytelling tendencies to the example of narrative textiles rather than metalwork as has sometimes been claimed—the black glaze itself being more tied to the latter—is intriguing and merits further analysis. Meanwhile, Bettina Kreuzer shows how interesting pieces from old sources can yet be buried in museum collections with her discussion of a little-known and recently cleaned hydria in the Louvre, formerly in the Campana collection and acquired by the museum in 1861. In this instance, the cleaning makes it easier to evaluate the vase's unusual inscription written in the genitive case. Mark Stansbury-O'Donnell's paper explores the relationship between composition and narrative in the work of a single artist (the Penelope Painter) on a single type of vase shape (the skyphos), while the classic theme of the Athenian symposion is revisited by Martin Langner and Helene Coccagna. Langner's essay on the placement of the krater in andrones during the Late Classical and Hellenistic periods, while raising important questions, seems the most constrained in the collection by necessary page limits; more discussion is needed to flesh out the hypotheses offered here. Among the remaining papers, one should mention Clemente Marconi's piece on the well-known yet controversial statue known as the Motya (Mozia) youth, and his assertion that "thirty years after its discovery...the only plausible interpretation...is that of a charioteer" (436), the most common reading in all this time. It is instructive to read this essay in concert with John Papadopoulos' brand-new (December 2014) article in the *Art Bulletin*; both papers elaborate upon conference presentations given at the Getty in 2013, when the Motya youth was in residence there.⁵ Where Marconi uses details of the sculpture to maintain the traditional charioteer reading, Papadopoulos uses them to suggest he is a *kalathiskos* dancer at a festival of Apollo Karneios. The jury, it would seem, is still out.

The quality of production for the *Festschrift* is high as one would expect from De Gruyter, although accompanied by a rather hefty price. (On the publisher's website, an ebook/pdf costs the same as a hardcover copy—no discount.) Along with black-and-white illustrations in the body of each paper, some essays also have color plates at the book's end. There is no apparent pattern for how many color plates authors were allotted, so presumably this was a matter of availability or perhaps cost. It is a shame, though, that some illustrations which would have benefited from color reproduction, such as fig. 2 in Closterman's essay on funerary art and ritual (a detail of a white-ground lekythos, p. 165), did not receive it, whereas other essays (e.g., Brian Rose's) have a larger number of color images that appear less essential. Most illustrations are sufficiently legible, although a few seem too small for the complexity of the imagery, such as color fig. 40, the otherwise unpublished Meidian pelike from Lezzi-Hafter's essay. Perhaps this too was a cost issue. The volume is well proofread, with limited typographical errors spotted by this reader. In general, the editors are to be commended for their skillful handling of forty papers by forty different authors, many of which are translations from different languages to boot.

A Festschrift is a special type of publication. A good one not only commemorates an honoree's career in a way that draws his/her colleagues into a circle of scholarship and brings joy to the honoree, but also provides a compendium of the state of the discipline and points the way toward future work. Approaching the Ancient Artifact does all of these things and is a worthy celebration of a more-than-worthy scholar.

Notes:

1. Full disclosure: Shapiro served as an outside reader on the present author's Ph.D. dissertation committee in 1998 and remains a mentor and friend.
2. "The Iconography of Mourning in Athenian Art," *American Journal of Archaeology* 95, 1991, 629–656.
3. Cf. recent work by Gloria Ferrari and Kathryn Topper arguing that at least some Athenian imagery is representative of "primitive life": e.g., Gloria Ferrari, "Myth and Genre on Athenian Vases," *Classical Antiquity* 22, 2003, 37–54, and Kathryn Topper, *The Imagery of the Athenian Symposium*, Cambridge University Press, 2012. For "Lenaia" vases and the export market, e.g., Juliette de la Genière, "Vases des Lénéennes?" *Mélanges de l'École française de Rome, Antiquité* 99, 1987, 43–61; and more recently, Cornelia Isler-Kerényi, "Retour au stamnos attique: quelques réflexions sur l'usage et le repertoire," *Mètis* 7, 2009, 75–89.
4. "Courtship Scenes in Attic Vase-Painting," *American Journal of Archaeology* 85, 1981, 133–143.
5. John Papadopoulos, "The Motya Youth: Apollo Karneios, Art, and Tyranny in the Greek West," *Art Bulletin* 96, 2014, 395–423.

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Please visit the site: <http://bmcr.brynmawr.edu/2015/2015-03-12.html>

EΙΔΗΣΕΙΣ - NEWS RELEASE

MORE ON THE VIOLENT DEATH OF PHARAOH SENEKAY

Newly discovered pharaoh at Abydos, part of a forgotten Egyptian dynasty, offers new answers and more questions about Egypt 3,600 years ago.

More on the violent death of Pharaoh Senebkay He may have led a king's life, but new forensic evidence gleaned from the remains of Pharaoh Senebkay indicates that the Egyptian ruler died in battle-the earliest known pharaoh to have done so-viciously attacked by multiple assailants.

Last year, the tomb of king Senebkay (ca. 1650-1600 BCE) was discovered at the site of Abydos by researchers from the University of Pennsylvania Museum working in association with Egypt's Ministry of Antiquities. Now the team led by Dr. Josef Wegner of the Penn Museum has completed a detailed study of Senebkay's skeleton, as well as the remains of several other kings whose tombs have been discovered nearby. The 2014-15 research is supported by the Penn Museum, with additional support from the National Geographic Society Expeditions Council .

"Forensic analysis has provided some new answers about the life, and death, of this ancient Egyptian king," noted Dr. Wegner, "while raising a host of new questions about both Senebkay, and the Second Intermediate Period of which he was a part."

A Warrior King

Pharaoh Woseribre Senebkay, who lived during the later part of Egypt's Second Intermediate Period (ca. 1650-1550 BCE), is now the earliest Egyptian pharaoh whose remains show he died in battle. Detailed analysis by Dr. Maria Rosado and Dr. Jane Hill of Rowan University has documented an extensive array of wounds on Senebkay's skeleton showing he died aged 35-40 years old during a vicious assault from multiple assailants. The king's skeleton has an astounding eighteen wounds that penetrated to the bone. The trauma includes major cuts to his feet, ankles, knees, hands, and lower back. Three major blows to Senebkay's skull preserve the distinctive size and curvature of battle axes used during Egypt's Second Intermediate Period. This evidence indicates the king died violently during a military confrontation, or in an ambush.

Emerging Role of the Horse

The patterns of wounds to Senebkay's body suggest he was attacked while in an elevated position relative to his assailants, quite possibly mounted on horseback. Another surprising result of the osteological analysis is that muscle attachments on Senebkay's femurs and pelvis indicate he spent a significant amount of his adult life as a horse rider. Another king's body discovered this year in a tomb close to that of Senebkay also shows evidence for horse riding, suggesting these Second Intermediate Period kings buried at Abydos were accomplished horsemen. Senebkay and other royal remains at Abydos provide valuable new insight into the early introduction of the horse (*Equus ferus caballus*) to Egypt. Although use of horseback riding in warfare was not common until after the Bronze Age, the Egyptians appear to have been mastering the use of horses during the Second Intermediate Period. Horseback riding may have played a growing

role in military movements during this era, even before the full advent of chariot technology in Egypt, which occurred slightly later, at the beginning of Egypt's New Kingdom (ca. 1550 BCE).

A Battle with Whom?

The death of Senebkay in battle appears to have taken place at considerable distance from his burial place at Abydos. The king's body also shows that significant time elapsed between his death and preparation of the body for burial. What remains a mystery is where the king died and who Senebkay's opponents were. Possibly the king died in battle fighting against the Hyksos kings who at that time ruled northern Egypt from their capital at Avaris in the Nile Delta. However, Senebkay may have died in struggles against enemies in the south of Egypt. Historical records dating to Senebkay's lifetime record at least one attempted invasion of Upper Egypt by a large military force from Nubia to the south. Alternatively, Senebkay may have had other political opponents, possibly kings based at Thebes.

Who was Senebkay? Tombs of seven other kings have now been excavated at Abydos opening a new window onto one of Ancient Egypt's most obscure periods. It appears probable that Senebkay and these other rulers form a short-lived dynasty who chose Abydos as their burial ground. Continued excavations of the Penn Museum researchers in collaboration with the National Geographic Society hope to shed light on Senebkay and the other kings buried near him.

Abydos and the Penn Museum

Penn Museum scholars have been excavating at the site of Abydos since 1967, as part of the Pennsylvania-Yale-Institute of Fine Arts/NYU Expedition to Abydos. Abydos is located on the western side of the Nile in Upper Egypt and was a religious center associated with the veneration of the funerary god Osiris. Dr. Josef Wegner has been excavating at the site of Abydos since 1994. Excavations in the area of South Abydos have revealed a thriving royal cult center that developed around the subterranean tomb of pharaoh Senwosret III located at the area called Anubis-Mountain, where Senebkay's tomb and other Second Intermediate Period tombs have been found.

Please visit the site: <http://popular-archaeology.com/issue/winter-01012015/article/more-on-the-violent-death-of-pharaoh-senebkay> [Go there for many good pix and cartouche]

BY QUESTIONING CONVENTIONAL WISDOM, ARCHAEOLOGY’S PETER MAGEE UNEARTHES THE ARABIAN PENINSULA’S PAST

When most archaeologists look at a map of the Middle East, they’re drawn to hot excavation spots such as Mesopotamia and Egypt.

Not Bryn Mawr’s Peter Magee. The 47-year-old professor of Near Eastern archaeology prefers the Arabian Peninsula, an area that many scholars have ignored. Arabia, the argument has long gone, was nothing more than miles of “dreary desert,” as one academic put it in 1889. In other words, the region’s past seemed to offer little for scholarly exploration. It certainly didn’t have the complex social states of Mesopotamia or the hieroglyphs of Egypt.

When Magee, however, studies that same map, he sees something entirely different. “I kept looking at the map,” he says of his undergraduate days at the University of Sydney, “and thinking, ‘It’s very unlikely that there’s nothing there.’”

As an expert on the ancient Near East, Magee argues that the conventional dismissive view of the region is ‘simultaneously ethnocentric and stereotypical.’

‘I think, really, to be a good scholar you need to be constantly questioning what you’re taught,’ he says “Was it actually that way? To me, it is very, very interesting to interrogate the past and what we think about the past—and to shift it a little bit.”

For nearly a quarter century, Magee has worked to bring understanding and attention to the Arabian Peninsula, a vast area that takes in Saudi Arabia, Yemen, Oman, the UAE, Bahrain, Qatar and Kuwait. His groundbreaking research on the region’s unique irrigation systems and on the domestication of camels has added to the growing record that Arabia has a rich archaeological history.

For the eighth year over winter break, Magee took Bryn Mawr students on a four-week field study to excavate at Tell Abraq about 20 miles outside Dubai in the United Arab Emirates. His ambitious recent [2014] book, *The Archaeology of Prehistoric Arabia: Adaptation and Social Formation from the Neolithic to the Iron Age* (Cambridge University Press), is fast becoming the definitive source on Arabia’s past. Currently on sabbatical, Magee is editing his next book, *The Oxford Handbook of Ancient Arabia* (Oxford University Press).

Images from the field

“He is without question one of the leading scholars on the Iron Age of Eastern Arabia,” says D.T. Potts, a professor of ancient Near Eastern archaeology and history at the Institute for the Study of the Ancient World at New York University. A leader in the field himself, he was Magee’s doctoral thesis adviser and first exposed him to the UAE’s Tell Abraq and Muweilah digs in the early 1990s.

“I think he clearly wants this area taken note of by archaeologists working in other parts of the world,” Potts says. “The way I see the world, and Peter sees the world, is not black and white. It’s much more a mosaic of cultures.”

Magee wants to break apart assumptions about the way of life in the ancient Near East. Major excavation sites point to a hierarchical state society in the wider region. Those models, though, don’t account for settlements such as Tell Abraq and Muweilah.

These villages and towns, Magee posits, sought social cohesion and actively resisted the structured, hierarchical systems of their neighbors.

“These are societies that are vastly different,” he says. “What it suggests to us is that there are a myriad of different ways in which people can exist.”

Many scholars, though, have doubts or simply lack interest in an area without a complex state, Magee allows. At a major 2012 congress on the ancient Near East, only eight of 250 papers—just 3 percent—reported on the Arabian Peninsula. Clearly, progress toward shifting opinions is painstakingly slow, figuratively sand grain by sand grain.

But this skeptic’s skeptic who is most intellectually invigorated when he’s challenging the mainstream also has an optimist’s bent.

“I have no great desire to work anywhere else at the moment,” Magee says. “We are on the cusp of really pushing this region to much better exposure. So I want to stay on it while that process unfolds.”

Magee, who teaches courses as varied as Introduction to Near Eastern Archaeology, The Archaeology of Middle Eastern Cuisine, and graduate seminars on archaeometric techniques, brings to his classroom his questioning mindset—and encourages the same in his students. Rather than use a single textbook, he has them read divergent viewpoints, discuss topics, and write a term paper.

“He really likes to question archaeology dogma,” says Lara Fields ’17 from Houston whose double major is in anthropology and classical and Near Eastern archaeology. “It’s not us just taking on what he believes is an accurate representation of the past, but actually creating our own.”

Fields was one of four undergraduate and two graduate students on the Tell Abraq field study. The experience, she says, both opened her eyes to the hard work of archaeologists and affirmed her choice of major.

“We excavated from 7 a.m. to 1 p.m.,” Fields says of her first dig, which included excavating a collapsed section of a massive fortification wall. “It was a lot of manual labor, shoveling. But it was exciting because you found stuff, sherds of pottery, lumps of bronze, a couple of camel figures.”

The professor was particularly excited about those camel pieces. In 1994, at the Muweilah dig, Magee himself unearthed a terracotta camel with a saddle. To this day, it is considered the most complete such figurine—and, he says, it is arguably the best-dated

representation of a domesticated dromedary in the world. The Sharjah Archaeological Museum in Dubai uses a depiction of that camel on its front gates.

Currently, Magee is collaborating on DNA work on camel bones to more definitively determine whether dromedaries were domesticated in the area (as his earlier work has suggested) or introduced from elsewhere.

“It’s turning up some tantalizing evidence,” he says, unable to reveal more until the publication of the results.

But needless to say, the very question itself challenges the norms.

“That’s the way,” Magee says, “society moves forward.”

Please visit the site: <http://news.brynmawr.edu/2015/02/27/by-questioning-conventional-wisdom-archaeologys-peter-magee-unearths-the-arabian-peninsulas-past/>

DNA RECOVERED FROM UNDERWATER BRITISH SITE MAY REWRITE HISTORY OF FARMING IN EUROPE, BY MICHAEL BALTER

Hunter-gatherers may have brought agricultural products to the British Isles by trading wheat and other grains with early farmers from the European mainland. That's the intriguing conclusion of a new study of ancient DNA from a now submerged hunter-gatherer camp off the British coast. If true, the find suggests that wheat made its way to the far edge of Western Europe 2000 years before farming was thought to have taken hold in Britain.

The work confronts archaeologists “with the challenge of fitting this into our worldview,” says Dorian Fuller, an archaeobotanist at University College London who was not involved in the work.

For decades, archaeologists had thought that incoming farmers from the Middle East moved into Europe beginning about 10,500 years ago and replaced or transformed hunter-gatherer populations as they moved west, not reaching Britain until about 6000 years ago. But that worldview had already undergone some modifications. Recent discoveries, for example, have shown some incoming farmers coexisted with the hunter-gatherers already living in Europe rather than quickly replacing them. In 2013, researchers reported that, beginning about 6000 years ago, farmers and hunter-gatherers had both buried their dead in the same cave in Germany and continued to do so for 800 years, suggesting that the two groups were in close contact. More controversially, researchers claimed that about 6500 years ago hunter-gatherers in Germany and Scandinavia may have acquired domesticated pigs from nearby farmers.

The new findings promise to further upset the scenario that farming steadily marched from east to west. A team led by Robin Allaby, a plant geneticist at the University of Warwick in the United Kingdom, was looking for the earliest evidence of domesticated plants in the British Isles. The researchers decided to take a gander at an underwater site called Bouldnor Cliff, 250 meters offshore from the hamlet of Bouldnor in the northwest corner of the Isle of Wight. (The island is in the English Channel just off Britain's southern coast.)

Bouldnor Cliff, located 11 meters below the water's surface, was discovered in 1999, when, as the United Kingdom's Maritime Archaeology Trust puts it on its website, “a lobster was seen throwing Stone Age worked flints from its burrow.” Archaeologists have been working there ever since. The site was clearly occupied by hunter-gatherers, who may have built wooden boats. Allaby's team took four core samples of sediments from a section of the site littered with burnt hazelnut shells apparently left by the hunter-gatherers and subjected the samples to both radiocarbon dating and ancient DNA analysis. The samples' wood and plants were dated to between 8020 and 7980 years ago, after which the site was inundated by the rising seas that created the English Channel and separated Britain from France.

For the ancient DNA analysis, the team used methods pioneered by paleogeneticist Eske Willerslev of the University of Copenhagen to recover and sequence genetic material left behind in sediments even after the plants that originally contained it have disintegrated. As might be expected, Allaby and his colleagues found DNA from a wide variety of trees and plants known to have populated southern Britain 8000 years ago, including oak, poplar, and beech, along with various grasses and herbs. But the team also got a big surprise: Among the DNA samples were two types of domesticated wheat that originated in the Middle East and that have no wild ancestors in northern Europe. That meant they must have been associated with the original spread of farming from the Middle East, beginning about 10,500 years ago, rather than domesticated locally. Yet many archaeologists assume that by 8000 years ago farming was no further west than the Balkans region and modern Hungary.

The researchers performed a number of tests to eliminate the possibility of contamination from modern wheat, including trying to sequence DNA from the chemical solutions it used in the experiments, but no plant sequences were detected. The only possible conclusion was that the domesticated wheat had actually come from the hunter-gatherer site at Bouldnor Cliff, the team reports online today in *Science*.

“The paper is methodologically impressive,” Fuller says. Willerslev agrees: “The study is quite convincing,” he says, adding that loose DNA from sediments will provide “some of the earliest detectable evidence for farming” because cereal grains themselves are less likely to be preserved.

So how did domesticated wheat get to Britain 2000 years before people began to farm there? Allaby’s team does not think the hunter-gatherers cultivated wheat themselves, because no wheat pollen was found in the samples—as should have been expected if the cereal had been allowed to go through its entire life cycle, including flowering.

The team proposes that farming might have spread to western France earlier than had been thought, up to 7600 years ago, and thus only a 400-year gap would have to be explained. But Peter Rowley-Conwy, an archaeologist at the Durham University in the United Kingdom, rejects that suggestion. “The authors do not do justice to the chronology of the spread of agriculture,” he complains, noting that “thousands of directly radiocarbon-dated cereal grains” argue against farming in Western Europe that early. “One DNA study of this kind is just not enough to overturn all this.”

Another possibility, Allaby says, is that the nomadic hunter-gatherers of southern Britain roamed much farther into the European mainland than previously realized, picked up wheat or wheat products from farmers to the east, and brought them back to Britain. He also suggests that the conventional dating of the spread of agriculture, based on clearly detectable cereal grains, might be missing earlier samples.

Allaby may well be right, says Greger Larson, an evolutionary biologist at the University of Oxford in the United Kingdom. “Are we underestimating the degree to which there were exchange networks between farmers and hunter-gatherers which extended far across time and space? Maybe the only way to pick them up is from DNA signatures.”

Yet Fuller says that the new finds do not necessarily indicate that the spread of farming needs to be radically redated. Rather, he suggests, small-scale pioneers of both farmers

and hunter-gatherers may have been “operating beyond the frontier of farming” as it spread west in a wave of advance. The wheat might have been part of trade or cultural exchanges between them. Just as rare spices from the east are regarded as valuable commodities today, Fuller says, the wheat at Bouldnor Cliff might have been symbolically charged and seen as “rare, exotic, and valuable,” rather than something to be eaten daily.

Please visit the site: <http://news.sciencemag.org/archaeology/2015/02/dna-recovered-underwater-british-site-may-rewrite-history-farming-europe>

SOME ANCIENT EGYPTIANS HAD STATE- SPONSORED HEALTHCARE CRAFTSMEN WHO BUILT ROYAL TOMBS ENJOYED SICK DAYS, DESIGNATED PHYSICIANS AND RATIONED MEDICINE-ALL PAID BY THE STATE, BY LAURA CLARK

State-sponsored healthcare might seem like a relatively modern concept, but Egyptian papyri texts dating back 3,100 to 3,600 years tell a different story.

These text were discovered during archeological excavations of Deir el-Medina, a village occupied during ancient Egypt's New Kingdom period, which spanned between 1550 and 1070 B.C. The village was the home to the highly skilled craftsmen charged with creating rock-cut tombs for royalty in the Valley of the Kings.

There were real perks to being a prized, adept worker in Deir el-Medina. The workers lived alongside their families, and the state provided them with monthly payments in grain, homes and even house servants. And, as the texts reveal, the workers also received the benefits of paid sick days. As New Historian explains:

Among the texts discovered are numerous records detailing when and why individual workmen were absent from work. Almost one-third of absences were as a result of a workman being too sick to work. Monthly ration distributions from Deir el-Medina, however, were very consistent; indicating that these workmen were paid their monthly grain even if they were off work for several days.

The papyri also show that the craftsmen were provided a kind of company doctor, "a workman on the crew designated as the swnw, physician," reported Anne Austin, the dig's lead archaeologist. The physician, outfitted with an assistant, was paid by the state for his services and given time off to prepare treatments.

The Egyptian state was involved with the pharmaceutical treatments of the day. "One text from Deir el-Medina indicates that the state rationed out common [medicinal] ingredients to a few men in the workforce so that they could be shared among the workers," writes the Conversation. But the distribution of treatments wasn't always so egalitarian. As is still the case today, some concoctions required expensive ingredients that only the very wealthy could afford-and there's no evidence suggesting that state intervened to provide such treatments more widely.

There's also textual evidence from Deir el-Medina that family played a big role in caring for the ill and disabled-an indication that in ancient Egypt, just as in most of the world today, a complex social system provided for those who couldn't provide for themselves.

It isn't hard to understand what might have fueled the Egyptian state's benefits package for skilled craftsmen. Trained and experienced workers of this kind were valuable assets,

and keeping them healthy would have helped ensure productivity in the construction of royal tombs. It wasn't exactly universal health care-but, for the craftsmen who enjoyed the privilege, it must have been a real advantage.

Please visit the site: <http://www.smithsonianmag.com/smart-news/some-ancient-egyptians-had-state-sponsored-healthcare-180954361/?no-ist>

ARCHAEOLOGISTS UNEARTH **'EXCEPTIONAL' 5TH CENTURY CELTIC** **PRINCE BURIAL SITE IN FRANCE,** **BY HENRY SAMUEL**

Huge necropolis by roundabout near Troyes most exciting Celtic discovery in half a century

Archaeologists in eastern France have made an "exceptional" discovery of what they believe is a Celtic prince buried in his chariot alongside exquisite ancient Greek ornaments.

Experts say the discovery of the prince, who died in the fifth century BC in Lavau, near Troyes, is the most remarkable of the period since they unearthed the Lady of Vix in northern Burgundy in 1953, due to the size of the burial site and quality of the objects.

The gender of the royal has not been fully confirmed, as the skeleton has only been partially uncovered. But given the presence of a long bronze sword found in its sheath, "we're probably talking about a local Celtic prince," said Dominique Garcia, head of Inrap, France's national archaeological dig institute.

Nearby lie the remains of a woman whose wrists carry bronze bracelets.

"We know this tomb was built before that of the prince. But there could well be family links between these two figures," said archeologist Bastien Dubuis.

The tomb was found in October, but has only now been made public. A wealth of treasures has been uncovered from a 430 sq ft burial mound and 150 sq ft burial chamber, found beside a roundabout in a nondescript industrial zone near Troyes, in France's Champagne region.

Chief among them was a huge, finely wrought bronze cauldron around three feet in diameter with four handles depicting the bearded and horned head of the Greek god Achelous, the chief river deity.

"We believe this cauldron is probably Etruscan or Greek made," said archaeologist Emilie Millet.

Everything on the site was laid out as if the deceased royal were about to begin a great banquet, or symposium.

The most remarkable piece was a black ceramic Greek wine pitcher with gold metalwork, described as "without equivalent" to date.

It depicts Dionysius at a banquet lying down under a vine opposite a female figure. Felines are visible.

Also present was a gold and silver sieved spoon for separating the wine from herbs and spices. "Even in the rich Greek tombs you don't find such objects," said Mr Garcia.

The prince's tomb dates from the first Iron Age, known as the Hallstatt era. It is part of a 75,000 sq ft necropolis with tombs from the Bronze Age and Gallo-Roman period.

The fact that the objects were Greek "customised for barbarians" was proof of the extent of "exchanges between the Mediterranean and the Celts," said Mr Garcia.

Traders travelled from Marseille in search of slaves, metals and precious materials, such as amber, entering in contact with continental Celts who were masters of the waterways. "These objects were like diplomatic gifts," he said.

The burial site is said to be better preserved than the Hochdorf chieftain grave – a richly furnished Celtic burial chamber dating from 530 BC, discovered in 1977 in Baden-Württemberg, Germany.

Please visit the site:

<http://www.telegraph.co.uk/news/worldnews/europe/france/11452569/Archeologists-unearth-exceptional-5th-century-Celtic-prince-burial-site-in-France.html>

JAWBONE FOSSIL FILLS A GAP IN EARLY HUMAN EVOLUTION, BY JOHN NOBLE WILFORD

On the morning of Jan. 29, 2013, Chalachew Seyoum was climbing a remote hill in the Afar region of his native Ethiopia, his head bent, eyes focused on the loose sediment. The site, known as Ledi-Geraru, was rich in fossils. Soon enough, he spotted a telltale shape on the surface - a premolar, as it turned out. It was attached to a piece of a mandible, or lower jawbone. He collected other pieces of a left mandible, and five teeth in all.

Mr. Seyoum, a graduate student in paleoanthropology at Arizona State University, had made a discovery that vaulted evolutionary science over a barren stretch of fossil record between two million and three million years ago. This was a time when the human genus, *Homo*, was getting underway. The 2.8-million-year-old jawbone of a *Homo habilis* predates by at least 400,000 years any previously known *Homo* fossils.

Anthropologists discovered a 55,000-year-old skull fossil in the Manot Cave in western Galilee in 2008, and it was subjected to years of analysis. Skull Fossil Offers New Clues on Human Journey From Africa JAN. 28, 2015

More significant, scientists say, is that this *H. habilis* lived only 200,000 years after the last known evidence of its more apelike predecessors, *Australopithecus afarensis*, the species made famous by "Lucy," whose skeleton was found in the 1970s at the nearby Ethiopian site of Hadar.

William H. Kimbel, director of the Institute of Human Origins at Arizona State, said the Ledi-Geraru jaw "helps narrow the evolutionary gap between *Australopithecus* and early *Homo*," adding that it was an excellent "transitional fossil in a critical time period in human evolution."

The discovery was announced Wednesday in two reports for the journal *Science* by researchers at Arizona State, the University of Nevada, Las Vegas, and Pennsylvania State University. One paleoanthropologist not on the teams, Fred Spoor of University College London and the Max Planck Institute for Evolutionary Anthropology in Germany, endorsed the analysis.

Dr. Spoor said in an email that he agreed with the hypothesis that the new Ledi-Geraru mandible "derives from *Australopithecus afarensis*, and at 2.8 million years shows morphology that is ancestral to all early *Homo*."

How could Dr. Spoor not agree with the interpretation of the findings in the new report by Brian A. Villmoare of the University of Nevada, Las Vegas, and colleagues on the Arizona State team? By coincidence, Dr. Spoor was ready to predict many of the findings in the journal *Nature* a day before his predictions would have been proved right in the journal *Science*. When the relationship between the studies became clear, the two journals agreed to simultaneous publication of the articles on Wednesday.

Dr. Spoor's predictions were drawn from a digital reconstruction of the disturbed remains of the jaws of the original 1.8-million-year-old *Homo habilis* specimen found 50 years ago by the legendary fossil hunters Louis and Mary Leakey at Olduvai Gorge in Tanzania.

The reconstruction, suggesting a plausible evolutionary link between *A. afarensis* and *H. habilis*, yielded a remarkably primitive picture of a deep-rooted diversity of a species that emerged much earlier than the 2.3 million years ago suggested by some specimens. The teeth and jaws appeared to be more similar to *A. afarensis* than to subsequent *Homo erectus* or *Homo sapiens*, modern humans that emerged about 200,000 years ago.

Dr. Spoor's analysis also seemed to put a new face on *H. habilis*. He said that individual species of early *Homo* were more easily recognizable by jaw structure and facial features than by differences in brain size, which tend to be highly variable. Dr. Villmoare and colleagues made similar observations in their article. Both the predictions and the mandible findings called attention to smaller teeth with the emergence of *H. habilis* and evidence suggesting that the species probably split in different evolutionary lines, only one of which might have been ancestral to later *H. erectus* and *H. sapiens*.

In an email, Dr. Spoor explained that the split occurred sometime before 2.3 million years ago. The lineage leading to *H. habilis* must have kept the primitive jaw morphology. The Ledi-Geraru specimen kept the primitive, sloping chin that links it to a Lucy-like ancestor. Other lineages must account for the fact that *H. erectus* and *H. habilis* existed together for a period more than a million years ago.

In a second report for the journal *Science*, Erin N. DiMaggio of Penn State and other geologists examined soil, vegetation and fossils at Ledi-Geraru. They determined that when the *H. habilis* left its jaw there, the habitat was dominated by mammals that lived in a more open landscape - grasslands and low shrubs - than the more wooded land often favored by *A. afarensis*.

But after about 2.8 million years ago, increased African aridity has been cited as a possible result of widespread climate change affecting species changes and extinctions. Kaye E. Reed, co-leader of the Arizona State team, noted that the "aridity signal" had been observed at the Ethiopian fossil site. However, she said, "it's still too soon to say this means climate change is responsible for the origin of *Homo*."

For that, Dr. Reed said, "we need a larger sample of hominin fossils, and that's why we continued to come to the Ledi-Geraru area to search." That, and to learn more about the evolution of our genus, *Homo*.

A version of this article appears in print on March 5, 2015, on page A10 of the New York edition with the headline: Jawbone Fossil Fills a Gap in Early Human Evolution

Please visit the site: <http://www.nytimes.com/2015/03/05/world/jawbones-discovery-fills-barren-evolutionary-period.html>

U.S. ARCHAEOLOGISTS DISCOVER 18TH DYNASTY TOMB IN EGYPT

The tomb was discovered by a team of American archaeologists

An ancient tomb belonging to Amenhotep, guard of the temple of Egyptian deity Amun, has been discovered in the southern city of Luxor, the Egypt's antiquities ministry said on Tuesday.

The ministry said the tomb probably dates to the New Kingdom's 18th Dynasty (1543–1292 BC).

Photographs distributed by the ministry show a tomb with bright green and brown paintings with hieroglyphics.

“The tomb contains many stunning scenes with bright colors painted on plaster,” Antiquities Minister Mamdouh Eldamaty said in a statement.

“Many of scenes represent the tomb owner and his wife in front of an offering table and a view of a goddess nursing a royal child as well as scenes of the daily life,” he added.

The tomb was discovered by a team of American archaeologists alongside an Egyptian inspectors' team in the city of Luxor, 700 kilometers south of Cairo.

However, the temple guard's final resting place had been vandalized for unknown reasons.

The T-shaped tomb “was deliberately damaged in ancient times,” said Sultan Eid, the ministry's general director for the Upper Egypt region.

“The name and titles of the tomb owner, some hieroglyphic texts and scenes in addition to the names of the god Amun were deliberately erased,” Eid added.

Eldamaty said in a separate statement that a royal rest house belonging to King Thutmose II, also from the 18th Dynasty of the New Kingdom period, had been discovered in the Suez Canal province of Ismailia.

Please visit the site: <http://english.alarabiya.net/en/life-style/art-and-culture/2015/03/04/U-S-archaeologists-discover-18th-dynasty-tomb-in-Egypt.html>

BRONZE NUDE STANDS OUT IN NEW ACQUISITION BY ISRAEL MUSEUM RARE STATUE AND 'ABSOLUTELY PRISTINE' ANCIENT GLASS AMONG ARTWORK TO GO ON DISPLAY IN HONOR OF INSTITUTION'S JUBILEE, BY ILAN BEN ZION

His unblinking black eyes are what first draw you in. Beneath curled brazen locks, his piercing gaze is arresting - in part because he's an unblemished four-foot statue older than Jesus. Visitors to the Israel Museum will soon lock gazes with this rare Roman bronze - one of just a handful remaining intact from the ancient world - when it goes on public display for the first time in June.

The 1st century BCE nude, with its original colored-glass eyes, was among several hundred ancient Near Eastern and Greco-Roman artifacts recently donated to the Israel Museum by New York art collectors Robert and Renee Belfer in honor of the institution's 50th anniversary. The museum hailed the addition as a "transformative gift" that helps flesh out its already impressive collections.

The exhibit, titled "A Roman Villa - The Belfer Collection," will showcase about 100 of the newly acquired pieces and aims to highlight the luxury wares the likes of which would have graced the homes of the Roman elite. Other items will be displayed in the museum's permanent collections.

The adolescent figure's identity is uncertain, as the object it once held in its right hand is missing. "If divine, the possibilities include Hercules, who might have held his club, or Bacchus, who would have held his kantharos," or two-handled drinking bowl, the catalog description of the statue reads. "If an athlete, he could have held a palm branch or a wreath."

His provenance is likewise obscure. What's known is that he was obtained by late TV mogul John W. Kluge after passing through the hands of at least two other antiquities retailers. The Belfers bought the boy at a Christie's auction in New York for a cool \$1,351,500 in 2004.

"We have very few complete bronze statues in the world" from the Greco-Roman period, Dr. Silvia Rozenberg, one of the curators involved in assembling the exhibit, said as she perused the new acquisitions in the museum's cavernous interior. Her favorite was a bronze mirror whose cover is decorated with the profile of a Roman noblewoman, perhaps its original owner.

Other highlights of the exhibit include a majestic Roman marble head, mouth slightly agape; glass mosaics of fish so lifelike they're easily mistaken for digital photos; a Phrygian bronze helmet with decorative mustaches; bird's-eye view mosaics of ancient Rome's cityscape; and a gilt glass tomb marker with the images of a family of four,

stylistically similar to a contemporary Jewish piece already on display at the museum found in Rome's catacombs.

Curators at the museum said that the addition of the Belfer's artwork enhanced the already substantial collection of ancient glass and Greco-Roman art. The rarity and exquisite quality of the newly acquired pieces, which include glass, mosaics, bronzes, gargantuan ancient ceramics and marble sculptures, couldn't be overstated.

"I think that one of the things that characterizes the collection is the high quality of the items they gathered," Rozenberg said. "Almost every piece is a highlight."

The "unique" marble head, duplicated from an earlier Greek bronze as was fashionable during the Roman Empire, is exemplary of classical beauty as defined by master sculptor Polykeitus in the 5th century BCE. Adhering to its delicately carved curls, the encrusted remains of marine life indicate that at some point the statue was submerged at sea. Its stone indicates it hails from Rhodes, and perhaps sank aboard a ship sailing to Rome, Rozenberg posited.

The bulk of the collection, however, is ancient glass pieces, the oldest of which come from the 18th Dynasty of Egypt - a period remarkable for its distinctive artistic style.

Israel Museum director James Snyder said that the Belfers' gifts were remarkable for being "the finest, most pristine examples" of the ancient craft. Despite their fragility and great age, they're amazingly intact. But he also pointed out the historic harmony: "Blown glass first appears historically in Jerusalem, so the connection of glass here is very strong."

The collection as a whole also offers experts like Natasha Katsnelson, curator of ancient glass at the museum, a chronology of glasswork techniques and styles from across the ancient Mediterranean, from Italy to the Middle East.

"That's the whole beauty of the assemblage: we see the influence of one area on the other," Katsnelson said, "the dialogue between East and West."

One piece in particular, a Carthaginian head pendant, demonstrates the skill and creativity of glassworkers in antiquity. The Phoenician bauble is well known, and its eyes and whorled beard typify the Punic look, but it's remarkable for its size, preservation and quality of craftsmanship.

Robert Belfer, a former Enron director whose father fled Poland in the 1930s and made his fortune in oil, has donated extensively to the Metropolitan Museum of Art in New York and the Corning Glass Museum upstate.

But the Belfers' first ancient glass purchase was made in Israel in 1965 - the same year the Israel Museum opened - a factor which may have, in part, contributed to their decision to send their impressive collection to Jerusalem, Snyder said.

"When deciding on an ideal home for our collection, we could not think of a more fitting venue than the Israel Museum, especially for its emphasis on the foundational narrative of humankind that is so relevant to us all today," Renee Belfer, who also serves as chair

of the American Friends of The Israel Museum's executive committee, said in a statement.

"Our collection represents an important chapter in the history of civilization, and we are delighted to bestow the Israel Museum with this gift on the occasion of its 50th anniversary so that it may preserve and share the story of these ancient objects in perpetuity from Jerusalem, one of the central sites of that long history."

Please visit the site: <http://www.timesofisrael.com/bronze-nude-stands-out-in-new-acquisition-by-israel-museum/> [Go there for pix]

THE GREAT GATE OF ISHTAR: A DOOR TO WONDER, BY AMANDA RUGGERI

When Antipater of Sidon, the Greek poet of the 2nd Century BC, compiled the seven wonders of the ancient world, only one city claimed two sites: Babylon. Yet the two he listed - the Hanging Gardens and the city's wall - were just a couple of the many wonders to be found in the magnificent ancient city.

Located between the Tigris and Euphrates in what today is Iraq, Babylon was largely rebuilt by the its king Nebuchadnezzar II in the 6th Century BC, using vibrant glazed bricks in blues, reds and yellows. Ancient texts from Herodotus to the Old Testament describe its overwhelmingly opulent temples, shrines and palaces. At its peak, with more than 200,000 inhabitants, it was the largest metropolis in the world.

Symbolic of all of that splendour was a visitor's first introduction to the city: the monumental Gate of Ishtar, built in 575 BC out of enamelled bricks, in cobalt blues and sea greens, decorated with reliefs of 575 dragons and bulls. When German archaeologists began excavating the city in 1899, a surprising amount of that millennia-old magnificence remained - including the gate. It was in the century following, however, that much of the ancient city's magnificence would become most at risk.

Project Babylon

Even before excavations began, head archaeologist Robert Koldewey thought he knew what he would find. Near the city's castle in June 1887, he wrote, he had come across "brightly coloured fragments" of the enamelled bricks that were believed to have made up the city wall. Two years later, the digging began - and the ancient city began to reveal itself. "The finely coloured fragments made their appearance in great numbers, soon followed by the discovery of the eastern of the two parallel walls, the pavement of the processional roadway, and the western wall, which supplied us with the necessary orientation for further excavations," he wrote in his 1914 account of the discoveries, *The Excavations at Babylon*.

In 1902, his archaeologists unearthed the Gate of Ishtar, the most potent symbol of ancient Babylon's magnificence. The gate was exactly where they expected it to be, marking the entrance to the city at the beginning of the Procession Street, the main thoroughfare used for parades during new years' celebrations. "With its walls which still stand 12 metres high, covered with brick reliefs, it is the largest and most striking ruin of Babylon," Koldewey wrote.

In case any doubt remained about the gate's construction, there was an inscription in limestone in the voice of Nebuchadnezzar: "I placed wild bulls and ferocious dragons in the gateways and thus adorned them with luxurious splendour so that people might gaze on them in wonder." Now, thanks to Koldewey's team, the people of a new age could look on the gate in awe. "This particular gate - which was one of eight gates to the city, built in one of its latest and, one would have to say, its most glorious historical phases - really thrilled everybody," says Peter Machinist, professor at Harvard University's Department of Near Eastern Languages and Civilizations. "Even in antiquity, it already

came to be a kind of metonymy for the entire magnificence of the reconstruction of the city of Babylon, which Nebuchadnezzar engineered. And certainly, after it was set up, it became a major tourist attraction."

After its discovery, it became one again. The German archaeologists excavated as much as they could but when World War One came in 1914, the dig was shut down. Four years later, the conflict came to an end and the Ottoman Empire - Germany's ally in the war, which ruled the lands where the gate was discovered - collapsed. But the Germans were still able to negotiate with the occupying British forces to ship some of their finds to Berlin, including the Gate of Ishtar. What was put on display in the 1920s was not, and still is not, the entire gate: it was too large. Even so, the section brought the magnificence of ancient Babylon to life in a way that hadn't happened in thousands of years.

Tale of two tyrants

After World War Two, another large excavation took place, this one led by Italian archaeologists, says Machinist. And then came Saddam Hussein, who took power in 1979. "He got this notion that he was not simply a Sunni Muslim, but the lineal descendant of these Babylonian heroes of the past. So he started to reconstruct the site in the 1980s," he says. On the ancient foundations, Hussein built copies of the gate and of Nebuchadnezzar's palace; in the style of the Babylonian king, he included inscriptions about his own work.

The parallel Saddam was trying to make with Nebuchadnezzar was not all that surprising. A military mastermind (or scourge, depending on your perspective), Nebuchadnezzar devastated the Phoenician city of Sidon, defeated Egypt's armies and, in 587 BC, sacked Jerusalem's Temple of Solomon; Saddam's adventures in Kuwait and Iran are well known.

Each time Nebuchadnezzar's soldiers moved into new territory, they enslaved the population and plundered its treasures. And with his newfound manpower and loot, Nebuchadnezzar rebuilt the Babylonian capital. He finished his father's palace, built the Hanging Gardens for his wife and built Babylon's walls, partly out of caution about an old prediction by the 8th Century BC Judean prophet Isaiah that the city would fall.

US troops in Iraq

US and Polish troops used the archaeological site as a base after the 2003 invasion of Iraq, causing extensive damage (Rex Features) But just as ancient Babylon ultimately fell so too would Saddam's Iraq, causing concern for the conservation of the country's ancient artefacts. In 2003 and 2004, American and Polish troops turned the area of the ancient city's archaeological site, including the Gate of Ishtar, Processional Way and Temple of Ninmah, into a military base, complete with helicopter pad. According to a study by the British Museum, the damage was extensive: some 300,000 sq m (4,000 acres) of the archaeological site had been covered with gravel, which also contaminated unexcavated areas; trenches had been dug into archaeological mounds; a heavy vehicle had driven on, and broken the pavement of the Processional Way; nine dragon figures on the Gate of Ishtar - whose foundations with their moulded, animal-decorated bricks remain in Babylon - had been damaged. After some 2,600 years of wars, plunder and neglect, it seemed, the site had met one of its surest enemies.

Today, it is too soon to tell what will happen with the site and its preservation. But in the meantime visitors to Berlin's Pergamon Museum, which has the gate's largest section on display, can gaze on it in wonder, just as Nebuchadnezzar intended.

Please visit the site: <http://www.bbc.com/culture/story/20150302-ancient-babylons-greatest-wonder> [Go there for pix]

COULD OUR ANCESTORS SEE BLUE? **ANCIENT PEOPLE DIDN'T PERCEIVE THE** **COLOUR BECAUSE THEY DIDN'T HAVE A** **WORD FOR IT, SAY SCIENTISTS,** **BY ELLIE ZOLFAGHARIFARD**

- Studies say language shapes what we see by making us focus on objects
- Blue doesn't appear at all in Greek stories and other ancient written texts
- As a result, scientists believe ancient civilisations didn't notice the colour
- Egyptians - who were the only culture that could produce blue dyes - were the first civilisation to have a word for the colour blue in 2500 BC
- The Himba people in Namibia do not have a word for blue and tests have shown they have difficulty distinguishing between green and blue

The blue and black (or gold and white) dress that swepted the internet last week revealed just how differently two people can see the world.

But it's not just about lighting conditions or optical illusions - evidence is mounting that until we have a way to describe something, we may not see its there.

Ancient languages, for instance, didn't have a word for blue and scientists believe as a result our ancestors didn't notice the colour even existed.

According to Business Insider's Kevin Loria, in 'The Odyssey,' Greek poet Homer famously describes the 'wine-dark sea.'

In 1858 William Gladstone, who later became the British prime minister, counted the colour references in the Homer's Odyssey and found blue wasn't mentioned at all.

Black is mentioned nearly 200 times and white about 100. Red, meanwhile, is mentioned fewer than 15 times, and yellow and green fewer than 10.

It wasn't just the Greeks. Blue also doesn't appear in the Koran, ancient Chinese stories, and an ancient Hebrew version of the Bible, according to a German philologist named Lazarus Geiger.

Egyptians, who were the only culture that could produce blue dyes, were the first ancient civilisation to have a word for the colour blue.

Once this product spread, other civilisations picked up on the colour, which doesn't readily appear in nature.

Today, there remain tribes who don't have a colour for blue, such as the Himba people in Namibia.

Several years ago, researchers showed some of the Himba tribe a circle with 11 green squares and one blue.

The study found they could not pick out which one was different from the others, or took much longer to make sense of it.

However, the same tribe has many different words for green. When they were shown squares with one green a different shade, they could pick it out immediately.

Another study focused on how Russian speakers have separate words for light blue (goluboy) and dark blue (siniy).

MIT recruited 50 people from the Boston area in Massachusetts, half of whom were native Russian speakers.

They found they were 10 per cent faster at distinguishing between light (goluboy) blues and dark (siniy) blues than at discriminating between blues within the same shade category.

A separate study last year seemed to confirm that while colours may be the same around the world, the language in which they are described has an impact on how they are perceived.

In English, the most popular base colours are blue, pink and green, while in China red, blue and green are more prominent.

A data scientist wanted to put this theory to the test and, in doing so, created a graphic that reveals how few ways there are in certain Eastern cultures to talk about colours, compared to the West.

Muyueh Lee from Taipei designed the infographic to show the range of names for colours and hues on Wikipedia, in English and then in Chinese.

His method is biased as there are more Wikipedia users that are English speakers, but it does reveal the importance of certain colours in both languages.

In Chinese, most popular base colours are 紅 (red), 藍 (blue) and 綠 (green). Colours can also relate to objects like salmon, stone and pine tree.

This may be telling as red in Chinese cultures symbolises good fortune and joy. It remains a popular colour in the country and is affiliated with the current government.

By comparison, popular English colours are blue, green and pink, with some colours based on objects.

Please visit the site: <http://www.dailymail.co.uk/sciencetech/article-2976405/Could-ancestors-blue-Ancient-civilisations-didn-t-perceive-colour-didn-t-word-say-scientists.html>

2,300 YEAR-OLD JEWELRY FOUND IN NORTHERN ISRAEL ISRAELI TOURISTS DISCOVER RARE TREASURE DATING BACK TO REIGN OF ALEXANDER THE GREAT WHO CONQUERED ISRAEL DURING THE HELLENISTIC PERIOD

Israeli tourists discovered a rare treasure trove filled with 2,300-year-old coins, and silver and copper objects inside a cave in northern Israel.

"Thanks to the work of honest citizens, we will be able to better understand the history of Israel," said Amir Ganor, director of the Israel Antiquities Authority.

About two weeks ago, members of the Israel Caving Club – Reuven Zachai, his son Chen and friend Lior Hiloni – went out on a preparation trip in a large stalactite cave in northern Israel before the rest of the club members joined in. When inside the cave, 21-year-old Chen noticed a shiny object.

The three men found two ancient silver coins minted during the reign of Alexander the Great, who conquered the land of Israel during the Hellenistic period (late fourth century BC). Alongside the coins, the men found several types of silver jewelry including rings, bracelets and earrings which seem to have been hidden in a piece of cloth in the cave 2,300 years ago.

Israeli tourists find treasure.

The Israel Antiquities Authority, who prohibited the publication of the location of the cave in fear of looting, assessed that there is the possibility that the objects were buried in the cave after the death of Alexander the Great when the country was at war with his successors.

The IAA researchers said the finding was "one of the most important discoveries in the north in the last years" and said that the cave held proof that there were humans who settled in the cave for extended periods of time.

"Object found in the cave were found to date back to the Chalcolithic period 6,000 years ago and until the Hellenistic period from 2,300 years ago," the IAA said. "The three cave club members displayed exemplary citizenship and this is the second time in the last month where citizens reported significant archeological findings," said Ganor.

Please visit the site: <http://www.ynetnews.com/articles/0,7340,L-4634969,00.html>

A NEW EGYPTIAN REVOLUTIONARY INVENTION IN THE WORLD OF RESTORATION - RETAINING THE CARBONIZED ANCIENT MATERIALS NOW BECAME POSSIBLE !!, BY ISLAM EZZAT

A co-teamwork from The Egyptian Ministry of Antiquities (MoA) and The Egyptian Atomic Energy Authority (EAEA) embracing Prof.Dr. Hassan A. Rehim , Prof.Dr. Omar A. Kareem and Islam M.Ezzat ; have reached an invention of a modified consolidant for ancient organic artifacts containing cellulose compound such as wood , textiles and manuscripts.

The modified material (μ Carbon 13) is a radio-isotope based natural polymer, representing an important product inspired from Radio-Isotopes unit at The Second Egyptian Research Reactor (ETRR-2). This material; recently nominated to be patented from The Egyptian Scientific Research Academy; would be the first Egyptian restoration product able to be locally and globally marketed. This invention represents a rescue for ancient carbonized materials such as papyri and textile wrappings as it could retain their lost cellulosic formation and thus their durability to survive.

A complete experimental study on artificially aged samples has been implemented within a year at The Gamma Irradiation Unit -EAEA and The Conservation Center laboratories at The Grand Egyptian Museum. Fascinating results - especially in carbonized textiles - were elucidated, this gave the opportunity to be applied on ancient carbonized linen found beneath a Middle-kingdom maquette (model) at Cairo Egyptian Museum.

" μ Carbon13" is the starting product of the specific unit of enhancing conservation materials prior to be inaugurated at The Grand Egyptian Museum soon; this unit would be capable of producing modified conservation materials and marketing them globally under name of The Ministry of Antiquities.

The co-teamwork also includes a number of researchers in the fields of atomic energy and restorers from the Antiquities Ministry like Dr. Mona Mansour, Dr. Ramda El Helw, Dr. Osama Abulkeir, Omaima Ali, Mo'men Othman and Mohammad Abdel Rahman.

Please visit the site:

https://www.facebook.com/permalink.php?story_fbid=350798118458672&id=336764893195328 [Go there for pix]

ARCE TEAM IS ON FIRE. SECOND 18TH DYNASTY TOMB TO BE DISCOVERED IN A WEEK

Minister of Antiquities announced the new discovery of a new tomb by ARCE (American Research Center in Egypt) in Qurna on the west bank of Luxor.

ARCE team has successfully unearthed today the second tomb in a week to the East of TT110 where ARCE team was originally working on restoration and conservation of TT110 funded by USAID.

The newly discovered tomb dated to New Kingdom, 18th Dynasty and it belongs to a person called "Satmut" and his wife who is called "Ta-kh-at".

The tomb walls has many daily life scenes in a good condition except the deliberate erasing of inscriptions and texts which is probably happened in ancient times. This new discovery alongside the tomb discovered last week, will open the door to new discoveries in the near future which require more work to unveil new scientific and archaeological facts.

According to Egyptian archaeologist "Ali El Henawi", team member of ARCE "The newly discovered tomb is located to the east of TT110 and share the same courtyard. The tomb door is to the south of the first tomb and it has an oblong hall with a shaft filled of debris."

Please visit the site: <http://luxortimesmagazine.blogspot.nl/2015/03/arce-team-is-on-fire-second-18th.html> [Go there for many pix]

HUMANS CAME TO DOMINATE THE EARTH AROUND THE YEAR 1610

The human-dominated geological epoch known as the Anthropocene probably began around the year 1610, with an unusual drop in atmospheric carbon dioxide and the irreversible exchange of species between the New and Old Worlds, according to new research published in *Nature*.

Previous epochs began and ended due to factors including meteorite strikes, sustained volcanic eruptions and the shifting of the continents. Human actions are now changing the planet, but are we really a geological force of nature driving Earth into a new epoch that will last millions of years?

Humans, a geological power

Scientists at UCL have concluded that humans have become a geological power and suggest that human actions have produced a new geological epoch.

Defining an epoch requires two main criteria to be met. Long-lasting changes to the Earth must be documented. Scientists must also pinpoint and date a global environmental change that has been captured in natural material, such as rocks, ancient ice or sediment from the ocean floor. Such a marker is called a golden spike.

The study authors systematically compared the major environmental impacts of human activity over the past 50,000 years against these two formal requirements. Just two dates met the criteria: 1610, when the collision of the New and Old Worlds a century earlier was first felt globally; and 1964, associated with the fallout from nuclear weapons tests. The researchers conclude that 1610 is the stronger candidate.

A global re-ordering

The scientists say the 1492 arrival of Europeans in the Americas, and subsequent global trade, moved species to new continents and oceans, resulting in a global re-ordering of life on Earth. This rapid, repeated, cross-ocean exchange of species is without precedent in Earth's history.

They argue that the joining of the two hemispheres is an unambiguous event after which the impacts of human activity became global and set Earth on a new trajectory. The first fossil pollen of maize, a Latin American species, appears in marine sediment in Europe in 1600, becoming common over subsequent centuries. This irreversible exchange of species satisfies the first criteria for dating an epoch – long-term changes to Earth.

The researchers also found a golden spike that can be dated to the same time: a pronounced dip in atmospheric carbon dioxide centred on 1610 and captured in Antarctic ice-core records. The drop occurred as a direct result of the arrival of Europeans in the Americas. Colonisation of the New World led to the deaths of about 50 million indigenous people, most within a few decades of the 16th century due to smallpox. The abrupt near-cessation of farming across the continent and the subsequent re-growth of Latin American forests and other vegetation removed enough carbon dioxide from the

atmosphere to produce a drop in CO₂. Thus, the second requirement of a golden spike marker is met.

The researchers have named the 1610 dip in carbon dioxide the ‘Orbis Spike’. They chose the Latin word for ‘world’ because this golden spike was caused by once-disconnected peoples becoming globally linked.

Lead author, Dr Simon Lewis (UCL Geography and University of Leeds), said: *“In a hundred thousand years scientists will look at the environmental record and know something remarkable happened in the second half of the second millennium. They will be in no doubt that these global changes to Earth were caused by their own species. Today we can say when those changes began and why. The Anthropocene probably began when species jumped continents, starting when the Old World met the New. We humans are now a geological power in our own right – as Earth-changing as a meteorite strike.”*

He added: *“Historically, the collision of the Old and New Worlds marks the beginning of the modern world. Many historians regard agricultural imports into Europe from the vast new lands of the Americas, alongside the availability of coal, as the two essential precursors of the Industrial Revolution, which in turn unleashed further waves of global environmental changes. Geologically, this boundary also marks Earth’s last globally synchronous cool moment before the onset of the long-term global warmth of the Anthropocene.”*

Nuclear weapons testing

The authors also considered the merits of dating the Anthropocene to 1964, which saw a peak in radioactive fallout following nuclear weapons testing. This marker is seen in many geological deposits, and by the 1960s human impact on the Earth was large. However, the researchers note that while nuclear war could dramatically alter Earth, so far it has not. While the fallout from nuclear bomb tests is a very good marker, the testing of nuclear weapons has not been – in geological terms – an Earth-changing event.

Rise in carbon dioxide

The beginning of the Industrial Revolution, in the late 18th century, has most commonly been suggested as the start of the Anthropocene. This linked a clear turning point in human history, and the rise of atmospheric carbon dioxide from fossil fuel use is a long-term global environmental change of critical importance. However, the researchers did not find a golden spike at that time because most effects were local, while the global exponential rise in carbon dioxide was too smooth an increase to form a precisely dated marker.

Solving our damaging relationship with our environment

The authors’ new paper ends by highlighting some implications of formally defining the Anthropocene.

Co-author, geologist Professor Mark Maslin (UCL Geography) said: *“A more widespread recognition that human actions are driving far-reaching changes to the life-supporting infrastructure of Earth will have implications for our philosophical, social, economic and political views of our environment. But we should not despair, because the power that humans wield is unlike any other force of nature, it is reflexive and therefore can be used, withdrawn or modified. The first stage of solving our damaging relationship with our environment is recognising it.”*

An official decision on whether to formally recognise the Anthropocene, including when it began, will be initiated by a recommendation of the Anthropocene Working Group of the Subcommission of Quaternary Stratigraphy, due in 2016.

Please visit the site:

<http://www.pasthorizonspr.com/index.php/archives/03/2015/humans-came-to-dominate-the-earth-around-the-year-1610>

SAHARAN 'CARPET OF TOOLS' IS EARLIEST KNOWN MAN-MADE LANDSCAPE

A new intensive survey of the Messak Settafet escarpment, a massive outcrop of sandstone in the middle of the Saharan desert, has shown that stone tools occur "ubiquitously" across the entire landscape: averaging 75 artefacts per square metre, or 75 million per square kilometre.

Researchers say the vast 'carpet' of stone-age tools - extracted from and discarded onto the escarpment over hundreds of thousands of years - is the earliest known example of an entire landscape being modified by hominins: the group of creatures that include us and our ancestral species.

The Messak Settafet runs a total length of 350 km, with an average width of 60 km. Parts of the landscape are 'anthropogenic', or man-made, through build-up of tools over hundreds of thousands of years.

The research team have used this and other studies to attempt to estimate the volume of stone tools discarded over the last one million years of human evolution on the African continent alone. They say that it is the equivalent of more than one Great Pyramid of Giza per square kilometre of the entire continent (2.1×10^{14} cubic metres of rock).

"The Messak sandstone, now in the middle of the vast sand seas of Libya, would have been a high quality rock for hominins to fracture - the landscape is in effect a carpet of stone tools, most probably made in the Middle and Upper Pleistocene," said Dr Robert Foley, from the Leverhulme Centre for Evolutionary Studies at the University of Cambridge, who conducted the research with colleague Dr Marta Mirazón Lahr.

"The term 'anthropocene' is now used to denote the point at which humans began to have a significant effect on the environment," said Mirazón Lahr. "The critical time may well be the beginning of the industrial revolution about 200 years ago. Some talk of an 'early anthropocene' about 10,000 years ago when forests began being cleared for agriculture.

"Making stone tools, however, dates back more than two million years, and little research has been done on the impact of this activity. The Messak Settafet is the earliest demonstrated example of the scars of human activity across an entire landscape; the effects of our technology on the environment may be considerably older than previously thought," Mirazón Lahr said. The study is published today in the journal *PLOS ONE*.

The survey, conducted in 2011, involved randomly selecting plots of one metre squared across the parts of the plateau surface. In each square, the researchers sifted through all the stones to identify the number that showed evidence of modification through hominin activity - evidence such as a 'bulb of percussion': a bulge or curved dent on the surface of a stone tool produced by the angular blows of hominin percussion. The average number of artefacts across all sample squares was 75.

At the simple end, large flakes of stone would have been opportunistically hacked from boulders to be used for cutting or as weapons. At the more sophisticated level, researchers found evidence that specific tools had been used to wedge into the stone in order split it.

"It is clear from the scale of activity how important stone tools were, and shows that African hominins were strongly technologically dependent," said Foley. "Landscapes such as these must have been magnets for hominin populations, either for 'stone foraging trips' or residential occupation."

The researchers say that if - as seems likely - the success of Stone Age communities depended significantly on tool technology, there would be enormous advantage to knowing, remembering and indeed controlling access to areas with a "super-abundance" of raw materials, such as the Messak Settafet.

"Hominins may well have become tethered to these areas, unable to stray too far if survival depended on access to the raw materials for tools, and forced to make other adaptations subservient to that need," said Mirazón Lahr.

One way that the environmental impact of hominin tool excavation may have been positive for later humans is through the clusters of small quarrying pits dotted across the landscape (ranging up to 2 metres in diameter, and 50 centimetres in depth).

These pits would have retained moisture - with surface water still visible today after rains - and the small pools would have attracted game. In many of these pits, the team found 'trapping stones': large stones used for traps and ties for game and/or cattle during the last 10,000 years.

By combining their data with previous extensive surveys carried out across Africa, the researchers attempted to estimate roughly how much stone had been used as tools and discarded during human evolution.

Although stone tool manufacture dates back at least 2.5 million years, the researchers limited the estimate to one million years. Based on their and others research, they standardised population density (based on extant hunter-gatherers), tool volume, the number of tools used by one person in a year and the amount of resulting debris per tool.

They estimate an average density of between 0.5 and 5 million stone artefacts per square kilometre of Africa. When converted into an estimate of volume, this is the equivalent of between 42 to 84 million Great Pyramids of Giza.

Researchers say this would be the equivalent of finding between 1.3 and 2.7 Great Pyramids per square kilometre throughout Africa.

Read more at: <http://phys.org/news/2015-03-saharan-carpet-tools-earliest-man-made.html#jCp>

Please visit the site: <http://phys.org/news/2015-03-saharan-carpet-tools-earliest-man->

[made.html?utm_content=buffer44bce&utm_medium=social&utm_source=facebook.com&utm_campaign=buffer](#)

BRONZE AGE BONES OFFER EVIDENCE OF POLITICAL DIVINATION, BY H. ROGER SEGELKEN

Trying to divine the future of a precarious administration, "House of Cards" President Frank Underwood enters the inner sanctum with a trusted adviser. "It's really a crapshoot," the adviser says, and the president nods. The bourbon is drained, cigars are snuffed, and the political leader emerges with a more confident sense of what's to come.

It really was a crapshoot, with very high stakes for sovereign rulers in a turbulent time," says Cornell archaeologist Adam T. Smith, interpreting evidence from 3,300-year-old Bronze Age shrines, ensconced within a hilltop fortress on the Tsaghkahovit Plain of central Armenia. Smith, a professor of anthropology in the College of Arts and Sciences, studies the role that the material world - everyday objects, representational media, natural and built landscapes - plays in the political lives of ancient and modern-day people.

Dice-like knucklebones used for osteomancy and colored stones used for lithomancy (divination with bones and stones, respectively) were found deep within the ruins of the fallen citadel of Gegharot. Aleuromancy (divination with freshly ground flour) is a likely explanation for implements found in one of three shrines, Smith and Cornell Ph.D. candidate Jeffrey F. Leon report in their October 2014 American Journal of Archaeology article, "Divination and Sovereignty: The Late Bronze Age Shrines at Gegharot, Armenia."

Excavations conducted at Gegharot since 2002 have turned up a variety of ceremonial, iconic and fortune-telling objects:

-censers and basins for burning aromatic plant materials that could induce a trance state; -covered storage containers made of clay where pollen analysis found evidence of wheat; drinking vessels, probably for long-gone wine; -sculpted clay idols "with vaguely anthropomorphic features and hornlike protrusions" and stele (standing blocks) the archaeologists say "likely served as focal point for ritual attention"; -grain-grinding implements and stamp seals to make impressions in flour dough; -dozens of knucklebones (also called astragali) of cattle, sheep and goats with certain sides blackened like the markings on dice; and -polished stones in colors ranging from black and dark grey to red, green and white.

The Tsaghkahovit Plain was sparsely populated until around 1500 B.C. when a nameless people (they left no written record of what they called themselves) began to build strongholds and new institutions of rule there. "It was a time of radical inequality and centralized practices of economic redistribution," Smith says, "and the political leaders were scrambling to hold on to their power. Knowing what the future held was critically important." The diviner, Smith says, was a kind of primordial actuary, assessing risks and advising on pathways forward.

We call them 'shrines' because of two distinctive qualities of the spaces: They were quite intimate in scale, with not much room for public spectacle," Smith explains, "yet they appear to have been religiously charged places, designed and built to host esoteric rituals

with consecrated objects - secretive rites focused on managing risks by diagnosing present conditions and prognosticating futures."

The Bronze Age people who tried to predict futures there had a quarter-millennium run, until about 1150 B.C. Their divination paraphernalia, meticulously unearthed by the archaeologists, looks as if it had been abandoned in place, moments before the inhabitants fled some cataclysm.

Without Bronze Age mystics to interpret the bones and stones, it's hard to know whether the citadel's demise was presciently foreseen. As the fictional President Underwood said: "It's not the beginning of the story I fear; it's not knowing how it will end."

More information: "Divination and Sovereignty: The Late Bronze Age Shrines at Gegharot, Armenia American" Journal of Archaeology Vol. 118, No. 4 (October 2014), pp. 549-563 DOI: 10.3764/aja.118.4.0549

Please visit the site: <http://phys.org/news/2015-03-bronze-age-bones-evidence-political.html> [Go there for link to video]

DOMESTIC CEREALS IN EVIDENCE 7,000 YEARS AGO IN SUDAN

Humans in Africa already exploited domestic cereals 7,000 years ago and thus several centuries earlier than previously known. Researchers have successfully verified ancient barley and wheat residues in grave goods and on teeth from two Neolithic cemeteries in North and Central Sudan.

The results of the analyses were recently published (online) in the journal PLoS ONE.

Dr. Welmoed Out from the University of Kiel was involved in the investigation. “*With our results we can verify that people along the Nile did not only exploit gathered wild plants and animals but even crops of barley and wheat.*”

These were first cultivated in the Middle East about 10,500 years ago and spread out from there to Central and South Asia as well as to Europe and North Africa – the latter faster than expected. “*The diversity of the diet was much greater than previously assumed,*” states Out and adds: “*Moreover, the fact that grains were placed in the graves of the deceased implies that they had a special, symbolic meaning.*”

The research team, coordinated by Welmoed Out and the environmental archaeologist Marco Madella from Barcelona, used a special high-quality light microscope as well as radiocarbon analyses for age determination. Mineral plant particles, so-called phytoliths, survive for a very long time, even when other plant remains are no longer discernible. In addition, calculus on the teeth provide evidence about the diet of these prehistoric humans due to the starch granules and phytoliths.

Read full paper here:

<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0110177>

Please visit the site:

<http://www.pasthorizonspr.com/index.php/archives/11/2014/domestic-cereals-in-evidence-7000-years-ago-in-sudan>

ITALY: ROMAN MILITARY FORT IN TRIESTE DATING TO 178BC IS OLDEST EVER DISCOVERED, BY HANNAH OSBORNE

The oldest ever Roman military fortification has been discovered in Trieste - the only Roman fort ever to be found in Italy.

The military camp found consists of one large fort with two minor ones to either side. It is believed to have served as the foundation for the first settlement of Tergeste - which Julius Caesar colonised in 177BC.

Using Light Detection and Ranging, Ground Penetrating Radar and archaeological surveys, scientists from the Abdus Salam International Centre for Theoretical Physics found the fort on Italy's north-east border with Slovenia. Findings are published in the Proceedings of the National Academy of Sciences.

Speaking to IBTimes UK, lead author Federico Bernardini said: "We have discovered a big central fort flanked by two minor forts in front of northern Istria. It is the first time that Roman military fortifications have been discovered in the region - and in Italy too - shedding light on the Roman conquest and Romanisation process which were practically unknown in the area of Trieste. This opens a new chapter in the history of Trieste region."

It predates many of the famous Roman military fortifications, such as those found in Numantia, Spain, by several decades. Although camps like Numantia are found across the Mediterranean and Western Europe, this is the only one ever identified in Italy.

The large central camp, called San Rocco, was over 13 hectares in size (about 18 football pitches). It was defended with wide ramparts and was strategically located near the Bay of Muggia. Researchers believe it was built in 178BC during the first year of the second Istrian War (178-177BC).

Bernardini explained: "In 181BC the colony of Aquileia was founded very close to the Istrian territory producing contrasts related to problems in trade activities. Clashes are reported between the Romans and the Histri during the foundation of Aquileia in 181BC, but it was only a few years later, during 178-177BC, that Istria was conquered and its people definitely subjected. The camps were probably built during the first year of the war in 178BC.

"One of the main aims of the Istrian war, according to Titus Livy, was to destroy the bases that the pirates had on the Istrian peninsula. The objective was also to protect the new neighbouring city of Aquileia (that became one of the largest cities in the Roman Republic) from the incursion of the Istrian peoples.

"It is possible that the main central San Rocco camp corresponds to the fortress reported by Livy describing the first year of the third Istrian war (178BC). According to Livy, in a first phase of the conflict the two legions of Roman Republic were defeated by Histri and

the camp was lost (probably San Rocco). The Istrians celebrated the easy victory with wine and food, but the Romans came back."

Quoting Titus Livy, he added: "The Istrians having made an attack on the empty camp, after that no other had met them in arms [..]. being unaccustomed to any sort of rich food, they greedily gorged themselves with meat and wine [...] About eight thousand Istrians were killed, but not one prisoner taken; for rage and indignation had made the Romans regardless of booty."

Bernardini said they were very surprised to find such a large and important site in an area that has long been studied. They hope to get funding to perform excavations at the site - a fundamental requirement to extract more precise information about the chronology and military architecture.

"It would be very exciting to find direct evidence of the clashes reported by literary sources, such as 'militaria' of the second century BC," he said.

Please visit the site: <http://www.ibtimes.co.uk/italy-roman-military-fort-trieste-dating-178bc-oldest-ever-discovered-1492168> [Go there for pix and neat images]

GEM ENGRAVED WITH GODDESS' IMAGE **FOUND NEAR KING HEROD'S MAUSOLEUM,** **BY OWEN JARUS**

A translucent orange gem engraved with an image of a goddess of hunting has been found near a mausoleum built by Herod the Great, the king of Judea who ruled not long before the time of Jesus.

The carnelian gem shows the goddess Diana (or her Greek equivalent, Artemis) with a sumptuously detailed hairstyle and wearing a sleeveless dress, with a quiver behind her left shoulder and the end of a bow protruding from her right shoulder. Both Diana and Artemis were goddesses of hunting and childbirth.

An iron ring that may have held the gem was found nearby. Researchers say the ring and gem were likely worn by a Roman soldier who was stationed at the site long after Herod's death. The soldier could have used the gem to create seals, pressing it into soft material like clay or beeswax to create images of the goddess, the researchers said. [In Photos: The Controversial 'Tomb of Herod']

Herod, who lived from 73 B.C. to 4 B.C., ruled as king of Judea, with support from the Roman Empire. He constructed a palace complex known as the Herodium about 7.5 miles (12 kilometers) south of Jerusalem. In 2007, archaeologists discovered a hillside mausoleum at the Herodium that may have been the place where Herod was buried. (There is an ongoing debate about whether Herod was actually buried there.)

The ring was found in a garbage dump located above the mausoleum. The dump was used in a cleaning operation by Roman soldiers, who occupied the Herodium after crushing a rebellion in A.D. 71, said Shua Amorai-Stark, a professor at Kaye Academic College of Education in Beersheba, Israel, and Malka HersHKovitz, keeper of antiquities at Hebrew Union College-Jewish Institute of Religion in Jerusalem.

Researchers cannot be certain that the ring and gem were worn by a Roman soldier, but the idea is bolstered by the fact that the goddess Diana was popular among Roman troops, and the ring itself is fairly large and would have fit an adult male's finger, the researchers said.

Diana "was one of the goddesses appreciated and favored by soldiers, whose power and protection was revered and sought by them," Amorai-Stark and HersHKovitz told Live Science in an email.

The fact that the ring is made of iron also supports the idea that the gem belonged to a soldier, because at the time, most Roman troops could not wear gold rings.

"In the early Roman Empire, ownership of gold rings was restricted to the senatorial and equestrian orders," Amorai-Stark and HersHKovitz wrote, adding that iron rings have been found at other known Roman army sites. [Photos: Gladiators of the Roman Empire]

A goddess's power

The gem likely would have been attached to the iron ring. When the gem was pressed into a soft material, such as clay or beeswax, it left an engraving of the goddess Diana behind.

Gems like this were used throughout the Roman Empire, the researchers said. They could have been used for "sealing correspondence, or confirming wills and contracts of all kinds, as well as for the practical purpose of sealing parcels, purses and so forth," Amoraï-Stark and Hershkovitz wrote in the email.

The image may also have had a special significance to its owner, especially if he was a soldier.

"Diana was also believed to protect one from evils of combat," wrote Amoraï-Stark and Hershkovitz. "The owner of the gem/ring might have believed in its power to protect him from the evils of war, and war-affiliated hardships and wounds."

Making the gem

A carnelian gem like this one would have been expensive - an item that only people from a wealthy or middle-income background could afford, Amoraï-Stark and Hershkovitz said.

Engraving the image of the goddess would have been a challenging job. The "majority of scholars (today) think that the Roman artisans of gems used [a] 'magnifying' glass to engrave the detailed gems with the help of drills," Amoraï-Stark and Hershkovitz wrote in the email.

A lubricating powder made from a crushed hard stone would have been applied to the gem before the engraving was done. This powder allowed "fine engraving lines and details" to be added to the gem, while ensuring "that the drilling and the heat produced while engraving does not result in [the gem breaking]" Amoraï-Stark and Hershkovitz wrote.

The discovery of the gem and iron ring was published recently in the first volume of the book "Herodium: Final Reports of the 1972-2010 Excavations Directed by Ehud Netzer" (Israel Exploration Society, 2015). Volume 1 focuses on the mausoleum.

Please visit the site: <http://www.livescience.com/50156-engraved-gem-herod-mausoleum.html> [Go there for pix]

SLIP ME SOME SKIN - SCIENTISTS **TRACING THE HISTORY OF LIVESTOCK** **BREEDING PROBE PARCHMENT** **DOCUMENTS FOR GENETIC** **INFORMATION, BY MOLLY SHARLACH**

The Borthwick Institute for Archives, housed at the University of York in the U.K., boasts thousands of church documents, some of which date back to before 1300, as well as troves of medical illustrations, architectural drawings, and records of the British-Caribbean slave trade. But recently, a team of biologists began digging into the Borthwick's records in search of a different sort of information: genetic material that is yielding insights into the selective breeding of farm animals.

Rather than rely solely on scarce, weather-beaten bones to reconstruct the animals' genetic histories, the researchers decided to extract DNA from pieces of 17th- and 18th-century parchment. Produced from the skins of sheep, goats, and cattle, parchment was commonly used as a writing substrate until paper came into wide use in the 19th century.

Beginning with the Dead Sea Scrolls in 1996, a handful of researchers have used polymerase chain reaction (PCR) to amplify bits of high-copy mitochondrial DNA from parchment, but these investigations have yielded little information beyond species identification. PCR favors longer stretches of DNA, which often come from contaminants, and can also produce chimeric sequences when, for example, a sheep DNA fragment is incompletely amplified, and a bit of goat DNA attaches to the amplicon in its place.

Matthew Teasdale and Daniel Bradley of Trinity College Dublin and their colleagues were the first to apply next-generation sequencing to DNA from parchment (*Phil Trans R Soc B*, 370:20130379, 2014).

"The key parameter with historical DNA is simply how much of your target species DNA is there," says Bradley. "And parchments have a very high percentage of endogenous DNA compared to contemporaneous bone samples." Parchment documents also offer the advantage of more precise dating.

To test the feasibility of high-throughput sequencing for analyzing animal genomes from parchments, Teasdale and Bradley teamed up with bioarchaeologists at the University of York and Borthwick archivist Christopher Webb.

"At the beginning of the process, we didn't know how much parchment would be needed in order to get a decent DNA record," says Webb. He advised the researchers to start with "conservation fragments—in other words, bits of parchment that we've taken off records that are of no significance in themselves," he explains. "They were only taken off because the records were themselves damaged and needed to be conserved and repaired."

The team took 25 mm² pieces from a pair of damaged parchments in the Borthwick archives: a 17th-century title deed and the cover of an 18th-century parish register book. Prior work on English parchments suggested these were made of sheepskin, which the team confirmed using mass spectrometry analysis of the protein collagen-parchment's main component. The manuscript dates spanned a period of major sheep-breeding advances in England, when selective mating efforts greatly enhanced the quality of wool.

Both parchments yielded complete mitochondrial genomes, as well as nearly 10 percent of the sheep nuclear genome—an improvement over the 0.1 to 5 percent coverage obtained from bone samples. Contamination rates from both modern and historical human DNA were around 5 percent.

"Next-generation sequencing is such a good technique" for ancient DNA studies, says Bradley. Because "you're analyzing everything," he says, contamination "just seems to melt away . . . we can analyze our way through it."

The researchers compared single-nucleotide polymorphisms (SNPs) from the parchment DNA to those found in modern sheep breeds. The SNPs from the 17th-century parchment matched the genotypes of heritage black-faced sheep from northern Britain, while the 18th-century sample was similar to sheep varieties from southern regions, which were hotbeds of sheep-breeding innovation.

Encouraged by this glimpse into sheep history gleaned from just two parchments, Bradley and his colleagues are now analyzing more Borthwick documents to get a fuller picture of the genomic changes that occurred during selective breeding. They also expect Irish archives to tell the history of cattle changes, and goat-based parchments to reveal breeding trends in southern Europe.

"The genome change in sheep is a big deal in this period," says Bradley. "A lot of England's wealth is built around the wool trade, and in terms of breeding, this is where it's happening. So [this work] opens up a tantalizing window as to what a more concentrated analysis might reveal."

The group's preliminary findings differ from the last published analysis of parchment DNA. In a PCR-based study, Michael Campana and his colleagues at the University of Cambridge amplified nuclear and mitochondrial DNA fragments of multiple species from each of a dozen 18th- and 19-century English parchments (*J Archaeol Sci*, 37:1317-25, 2010).

"It looked like you were PCRing this horrible soup rather than getting good data from one individual," says Bradley. The intermingled sequences suggested complex parchment manufacturing processes, making DNA analysis potentially useful for understanding parchment sources, but not necessarily for tracking the history of animal husbandry.

Campana thinks the next-generation sequencing approach is promising, but cautions that many parchments may contain mixtures of species. "Parchment manufacture is complicated and extremely variable," says Campana, who is now investigating the history of infectious diseases at the Smithsonian Institution in Washington, D.C. "There's no reason to believe that one set of parchments represents all sets of parchments."

Besides reconstructing animal breeding histories, Webb hopes DNA analyses will help to answer another set of questions. Historians still know very little about the intricacies of parchment manufacturing and how raw-material sourcing differed by region and time period, he says. "One of the most interesting questions for me, as an archivist looking at the archives of long-lived institutions, is: Where did they get their parchment from?"

"We have absolutely no idea," says Webb, whether the Diocese of York sourced its parchments locally, from London, or from all over England. "Depending on what the answer is, that tells us a lot about medieval economy and trade."

Please visit the site:

<http://www.the-scientist.com/?articles.view/articleNo/42240/title/Slip-Me-Some-Skin/>

OLDEST EVIDENCE OF BREAST CANCER FOUND IN EGYPTIAN SKELETON

A team from a Spanish university has discovered what Egyptian authorities are calling the world's oldest evidence of breast cancer in the 4,200-year-old skeleton of an adult woman.

Antiquities Minister Mamdouh el-Damaty said the bones of the woman, who lived at the end of the 6th Pharaonic Dynasty, showed "an extraordinary deterioration".

"The study of her remains shows the typical destructive damage provoked by the extension of a breast cancer as a metastasis," he said in a statement on Tuesday.

Despite being one of the world's leading causes of death today, cancer is virtually absent in archaeological records compared to other diseases - which has given rise to the idea that cancers are mainly attributable to modern lifestyles and to people living for longer.

But the finding, along with evidence reported last year by British researchers of metastatic cancer in a 3,000-year-old skeleton found in a tomb in modern Sudan, suggests cancer was around in the Nile Valley in ancient times.

The anthropological team from the University of Jaen said the Egyptian woman was an aristocrat from Elephantine, the country's southernmost town.

Her remains were discovered in the necropolis of Qubbet el-Hawa, west of the southern city of Aswan, the ministry said.

According to the World Health Organization's cancer research agency, new cancer cases rose to an estimated 14 million a year in 2012, a figure seen rising to 22 million within 20 years.

(Reporting by Mahmoud Mourad; editing by John Stonestreet)

Please visit the site: <http://www.reuters.com/article/2015/03/24/us-egypt-antiquities-cancer-idUSKBN0MK20620150324>

MASSIVE UNDERGROUND CITY FOUND IN CAPPADOCIA REGION OF TURKEY SUBTERRANEAN RETREAT MAY HAVE SHELTERED THOUSANDS OF PEOPLE IN TIMES OF TROUBLE, BY JENNIFER PINKOWSKI

When the invaders came, Cappadocians knew where to hide: underground, in one of the 250 subterranean safe havens they had carved from pliable volcanic ash rock called tuff.

Now a housing construction project may have unearthed the biggest hiding place ever found in Cappadocia, a region of central Turkey famous for the otherworldly chimney houses, cave churches, and underground cities its residents carved for millennia.

Discovered beneath a Byzantine-era hilltop castle in Nevşehir, the provincial capital, the site dates back at least to early Byzantine times. It is still largely unexplored, but initial studies suggest its size and features may rival those of Derinkuyu, the largest excavated underground city in Cappadocia, which could house 20,000 people.

Light in the Tunnel

In 2013, construction workers demolishing low-income homes ringing the castle discovered entrances to a network of rooms and tunnels. The city halted the housing project, called in archaeologists and geophysicists, and began investigating.

A 300-year-old paper trail between the local government and Ottoman officials suggested where to begin. "We found documents stating that there were close to 30 major water tunnels in this region," says Nevşehir mayor Hasan Ünver.

In 2014, those tunnels led scientists to discover a multilevel settlement of living spaces, kitchens, wineries, chapels, staircases, and bezirhane-linseed presses for producing lamp oil to light the underground city. Artifacts including grindstones, stone crosses, and ceramics indicate the city was in use from the Byzantine era through the Ottoman conquest.

Like Derinkuyu, the site appears to have been a large, self-sustaining complex with air shafts and water channels. When danger loomed, Cappadocians retreated underground, blocked the access tunnels with round stone doors, and sealed themselves in with livestock and supplies until the threat passed.

Cappadocia's early adoption of Christianity-the apostle Paul arrived in the first century, and by the fourth its bishops were power players in the newly Christian Byzantine Empire-made it a safe haven during centuries of war for control of Anatolia. Muslim invaders arrived in the late eighth century, and centuries later came the Seljuk Turks. Eventually Ottoman emperors ruled the entirety of Anatolia.

How Big Is It?

Geophysicists from Nevşehir University conducted a systematic survey of a 1.5-mile (4-kilometer) area using geophysical resistivity and seismic tomography. From the 33 independent measurements they took, they estimate the site is nearly five million square feet (460,000 square meters).

These studies suggest the underground corridors may plunge as deep as 371 feet (113 meters). If that turns out to be accurate, the city could be larger than Derinkuyu by a third.

But the exact size is unknown, cautions Nevşehir Museum director Murat Gülyaz, the archaeologist in charge of the investigation. "As of now, it is not possible to say. But given the city's location, defenses, and proximity to a water supply, it is highly likely that it spans a very large area."

"World's Largest Antique Park"?

"This new discovery will be added as a new pearl, a new diamond, a new gold" to Cappadocia's riches, raves Ünver, the mayor, who wants to build "the world's largest antique park," with boutique hotels and art galleries aboveground, and walking trails and a museum below. (The planned housing complex has been moved to the suburbs.) "We even plan to reopen the underground churches," he says. "All of this makes us very excited."

Gülyaz's team of archaeologists will continue to clear rubble from tunnels and explore deeper underground—a risky undertaking, since the soft tuff is prone to collapsing. "When the underground city beneath Nevşehir Castle is completely revealed," he says, "it is almost certain to change the destination of Cappadocia dramatically."

Please visit the site: <http://news.nationalgeographic.com/2015/03/150325-underground-city-cappadocia-turkey-archaeology/>

PEOPLE ATE PORK IN THE MIDDLE EAST UNTIL 1,000 B.C.-WHAT CHANGED?

A new study investigates the historical factors leading up to the emergence of pork prohibition

Bacon might be the greasy gastronomical craze of the decade in the United States, but in the Islamic and Jewish communities of the Middle East, pork has been off the menu for centuries.

That's in large part because certain religious writings ban dining on swine. But long before the emergence of the Old Testament and the Qur'an, people in the Middle East had largely cut the meat from their diets. But why?

As New Historian reports, Richard W. Redding, a professor of anthropology at the University of Michigan recently published a study attempting to decipher the historical origins of this cultural trend. He writes that archeological and anthropological evidence shows that between 5,000 and 2,000 B.C., the domesticated animals were common in the Fertile Crescent, likely used as "a household-based protein resource"-in other words, they were kept on hand as a tasty, nutritious food source. Then, around the 1,000 B.C., the keeping and eating of pigs sharply declined.

Pigs need a fair amount of water to survive, which makes them poor travel buddies when a family needs to move-and this could be one factor informing their disappearance from the dinner table. But Redding doesn't think that's the primary reason. The blame for the change, his research suggests, can be placed on chickens, which took over pork's role as a food source.

There's good reason an ancient Middle Easterner might pick chickens over pigs. New Historian's Adam Steedham Thake explains:

chickens have several advantages over pigs. First, they are a more efficient source of protein than pigs; chickens require 3,500 litres of water to produce one kilo of meat, pigs require 6,000. Secondly, chickens produce eggs, an important secondary product which pigs do not offer. Third, chickens are much smaller and can thus be consumed within 24 hours; this eliminates the problem of preserving large quantities of meat in a hot climate. Finally, chickens could be used by nomads. While neither chickens nor pigs can be herded in the same way as cattle, chickens are small enough to be transported.

And, Redding argues, it wouldn't make sense to keep both pigs and chickens, since their food and care needs are similar. "Under these circumstances, the chicken becomes a major protein resource," he writes, concluding that "If the pig had been integral to the subsistence system in the Middle East, it would not have been prohibited" by religious edicts.

Today, poultry and eggs are reportedly the second most-consumed group of foods in the Middle East next to red meats. But, Redding says, the pig never fully disappeared from the region. Pig husbandry continued in some woodland and marsh areas where more

abundant feed options meant the animal could pig-out without challenging chickens' survival.

Please visit the site: <http://www.smithsonianmag.com/smart-news/people-ate-pork-middle-east-until-1000-bc-what-changed-180954614/?no-ist>

EGYPT'S 4,600-YEAR-OLD PYRAMID OF ZOSER: A HISTORY OF CITIES IN 50 BUILDINGS, DAY 1

We kick off our new, 50-part series with a building that changed the course of human history. Erected in Memphis, one of the world's first purpose-built cities, the step-pyramid of Zoser is the oldest large-scale stone monument still standing.

The talk in Egypt these days is of a brand-new capital. The government wants to build a new seat of power to the east of Cairo, entirely from scratch. A city that, if finished, would in terms of population be the world's biggest-ever purpose-built capital. "A place," Egypt's housing minister said this week, "that would unite all the sections of Egyptian society."

It is a bold claim - but not a new one. The story of early urban life in Egypt is a story of capitals shifting from one new city to the next. Throughout ancient Egyptian history, rulers changed capitals to enforce a sense of national renewal or unity - a trend that began with the first purpose-built capital of a united Egypt, some 5,000 years ago.

Little is left of Memphis now, its few ruins lying just beyond the southern limits of modern-day Cairo. But in the centuries after its founding in around 2900 BC, Memphis became by some estimates the biggest settlement in the world. Erected in a strategic location between the newly unified northern and southern Egypt, it is arguably one of the first purpose-built cities in human history.

"We know of other earlier [Egyptian] cities," says Ana Tavares, an archaeologist who spent years researching parts of Memphis. "But this was the first city that was built very deliberately, to make a statement about the new country."

Perhaps no building underlines Memphis's significance within the annals of urban life as much as a huge tomb on its outskirts: the 4,600-year-old step-pyramid of Zoser (or Djoser), one of the early Egyptian pharaohs.

The pyramids at Giza are infinitely more famous than Zoser's. The pyramids at Dahshur are bigger. But none of them might have been built had Zoser's not come first, in about 2600 BC.

For his step-pyramid is not only the first of its kind. It is also the world's oldest large-scale stone monument to survive more or less intact (the nearby Gisir el-Mudir may have been even broader, but did not survive antiquity). Its experimental construction was therefore a major turning-point in the evolution of stone architecture.

As the Egyptian actor Omar Sharif remarks in a video now shown at the site, Zoser's pyramid "was this revolutionary idea that changed the course of human history".

Stone has become the defining feature of any city. But at that time, buildings were made with reeds, mud-brick and wood. In the early years of the pharaonic era, dead kings were

buried in vast rectangular slabs, made of mud-bricks, and known as mastabas. The point was to preserve the king's soul for the afterlife. Zoser's pyramid was the first finished attempt at something much grander - a storied stone structure that could send the soul towards the heavens.

Built a few hundred years after the establishment of Memphis, the pyramid was the product of considerable advances in construction techniques at the time. Instead of making just one mud-brick mastaba, Zoser's builders built six limestone ones, each smaller than the last, and placed them on top of each other. The result was a series of six huge steps, 62 metres high, that formed the Burj Khalifa of their day. Or in Sharif's words, "an ascending passage towards the beyond, a revolutionary conception that would influence the entire history of Egyptian architecture".

Inside the mastaba of Idut, a tomb in the shadow of the step-pyramid Facebook Twitter Pinterest Inside the mastaba of Idut, a tomb in the shadow of the step-pyramid. Like the mooted new capital of modern-day president Abdel Fatah al-Sisi, there was a hint of nation-building to Pharaoh Zoser's grandiose creation. The northern part of its enclosure was an extension - and some think it represents northern Egypt, which had only recently come under the firm control of the southern kings. "The significance may be that it reflects the consolidation of the 'unified' Egypt," says David Jeffreys, who directed the Egypt Exploration Society's survey of Memphis.

But the pyramid had practical as well as symbolic significance. Stone has become the defining feature of any city. But at that time buildings were largely made with reeds, mud-brick and wood, using what are now forgotten techniques. The step-pyramid was one of the first times architects dabbled with stone on such a monumental scale - and their attempts to experiment can be seen in the building itself.

"The way the complex develops shows how they were getting more sure of themselves," says Tavares. "They start with one [stone] mastaba, and they realise that it holds. So they build another [on top], and that holds. And so they build another mastaba on top of that. And so on. They don't set out with a specific idea - it evolved as the building went on."

Despite working in a new medium, Zoser's builders seem to have been reluctant to let go of the aesthetics of the old one. A stone fence is carved to look like it's still made from reeds. Columns evoke bundles of papyrus. And here and there you can find the charming mistakes of builders unused to working with this new material of stone. If a bit of stone needed replacing, instead of removing the whole slab, it seems the builders would swap only the damaged part of it - as if they were working with wood.

"Eventually, when they get more sure of their use of stone, they move on to different kinds of architecture, and that results in the pyramids at Giza and Dahshur," says Tavares. "But the Zoser pyramid is at the cusp between the earlier tradition of mud-brick and reed, and a later tradition of stone. It's a glimpse onto a different kind of architecture."

It's also a glimpse, perhaps, of the world's first architect. No one was ever explicitly named as the pyramid's designer, but the widely-held belief is that it was a man called Imhotep, whose name is found on a statue near the entrance to the pyramid. Imhotep's abilities appear to have been extraordinary: other records show he was a doctor and high

priest, as well as the king's chief carpenter, head sculptor, and second-in-command. Years after his death, he was given the status of a god.

As Jeffrey says: "Imhotep becomes himself an iconic figure, not only architect - and possibly not one at all in the technical sense - but an early power merchant. How else could the labour for the pyramid be arranged and organised on a national scale?"

The ambition of his creation nods to the growing power and bureaucracy of the world's first nation-state. To build Zoser's pyramid, Egypt needed not just workers, but managers and civil servants. In previous generations, historians think the royal family might have dealt with most of the country's administration. But the expansion of Memphis's burial grounds forced the creation of "a more structured bureaucracy, opened up, for the first time, to career professionals drawn from a wider section of society and promoted on merit", writes Toby Wilkinson in *The Rise and Fall of Ancient Egypt*. "As Egypt embarked on pyramid-building, the pyramids were building Egypt."

That the step-pyramid survives today tells us much about the glory of the city it was built in. But that little else of Memphis remains alongside it is also testament to one of the earliest versions of urban decay.

Memphis lasted for over three and a half millennia. But it was abandoned in the seventh century AD, when Fustat - the precursor to modern Cairo - rose on the opposite bank of the Nile. Its biggest monuments endure to this day, while the smaller buildings of the city lie mostly under sand.

Jeffrey worries that within 30 years, many of these buried and unexamined ruins will be lost forever. The rate of local construction has left him fearing that much of the old site will soon be built over. The fate of Dahshur, where in 2013 villagers built a modern cemetery above the remains of an ancient one, is an example of what could be to come.

Even the attempts to restore Zoser's now-crumbling pyramid highlight the transient nature of urban glory. The company tasked with preserving it was instead recently accused of ruining it. A concerned watchdog said it had smothered its ancient stones with too modern a new surface.

Cities come, the experience of Memphis tells us. But they also go.

* Part 2 in our History of Cities tomorrow: the citadel of Aleppo, by Jonathan Steele.

Please visit the site: <http://www.theguardian.com/cities/2015/mar/23/egypt-pyramid-zoser-history-cities-50-buildings> [Go there for pix]

ARCHAEOLOGISTS UNEARTH ANCIENT FORTIFICATIONS AT COASTAL SITE IN ISRAEL

An international team of archaeologists has uncovered remains of a massive Iron Age period fortification wall and enclosure at the coastal archaeological site known as Ashdod-Yam, in Israel.

Located on the Mediterranean coast within the southern boundaries of the modern city of Ashdod and about 5 km northwest of Tel Ashdod, a related archaeological site, the site contains the remains of a fortified settlement that likely abutted a port facility that played a strategic and commercial role under ancient Assyrian dominance and control during the 8th and 7th centuries BCE.

"The fate of Ashdod-Yam was always connected to the capital city of Ashdod, one of the five major Philistine cities during the Iron Age," said excavations Director Dr. Alexander Fantalkin of Tel Aviv University. "In Byzantine times, as is evident from the 6th century AD Madaba mosaic map and a number of historical sources, the coastal city of Azotos Paraliot (Ashdod-Yam) became more important than its former capital Azotos Hippenot (Ashdod), known also as Azotos Mesogaios. It seems that this shifting of the region's center of gravity from Ashdod to Ashdod-Yam can be detected much earlier, perhaps already during the Iron Age, following the uprising of Yamani, the rebel king of Ashdod against the Assyrians, and the destruction of Ashdod in 712/711 BCE [by the Assyrians]."

The Iron Age fortified enclosure, the subject of current renewed excavations, was actually tested archaeologically between 1965 and 1968 under the directorship of Jacob Kaplan on behalf of the Museum of Antiquities of Tel Aviv-Jaffa. These early, more limited excavations exposed some elements of the enclosure wall and uncovered pottery finds of locally-produced and Phoenician origin, helping to date the compound to the 8th - early 7th centuries BCE. Fantalkin's renewed excavations, which began in 2013, will be more extensive.

"Following the first season of renewed excavations undertaken in the summer of 2013, the remains of massive ancient fortifications have been rediscovered," continued Fantalkin. "The construction, however, appears too impressive to have been done in a hurry and the fortifications were probably erected in order to protect a man-made harbor, created either before the rebellion or slightly afterwards. During the period of Assyrian domination, Ashdod-Yam became one of the most important Assyrian international emporia at the empire's Mediterranean frontier."

Fantalkin said that remains from the Hellenistic period were also discovered. "These buildings were found destroyed as a result of an earthquake, most probably accompanied by a palaeo-tsunami."

In 2015, the team will continue excavations, particularly on the inside of the enclosure. The southern part of the enclosure features a mound of earth, which Fantalkin suggests

might be significant. "Kaplan has reasonably suggested that this mass of earth probably conceals the remains of the 'citadel' of Ashdod-Yam. If so, this artificial mound may supply us with stratigraphically positioned remains for both the late 7th century BCE and the late 8th - early 7th centuries BCE settlements."

"We shall also attempt to locate a man-made harbor at Ashdod-Yam and clarify the nature of Hellenistic occupation," Fantalkin adds. "The excavations will shed light on the modes of Assyrian imperial control of subjected areas, clarifying the nature of interaction between different peoples in the Mediterranean melting pot at Ashdod-Yam."

Individuals and institutions interested in joining the excavations may visit the project website and the Registration and Housing Form for more information.

Ashdod-Yam's excavation project is a joint venture of the Institute of Archaeology at Tel Aviv University and the Institut für Alttestamentliche Wissenschaft of the University of Leipzig, with many additional partners from Israel and from abroad. The Ashdod-Yam archaeological project intends to study the archaeology and history of this site in the years to come. The project welcomes volunteers and institutions from all over the world. Various options for affiliations with the project can be arranged (such as independent volunteers, organized groups of volunteers and/or students; research-related affiliation; etc). As the project is, by definition, an inter- and multi-disciplinary endeavor, the project staff welcomes people with diverse research interests and perspectives.

Please visit the site: <http://popular-archaeology.com/issue/spring-2015/article/archaeologists-unearth-ancient-fortifications-at-coastal-site-in-israel>
