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Έτος Ίδρυσης 1982, έδρα:  
Κάνιγγος 27, 106 82 Αθήνα  
(Ένωση Ελλήνων Χημικών)

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# Πληροφοριακό Δελτίο της Ελληνικής Αρχαιομετρικής Εταιρείας

**- Ιούλιος 2009 -**

# Newsletter of the Hellenic Society of Archaeometry

**- July 2009 -**

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## **ΣΥΝΕΔΡΙΑ - CONFERENCES/WORKSHOPS**

# **SUBSISTENCE, ECONOMY AND SOCIETY IN THE GREEK WORLD** **IMPROVING THE INTEGRATION OF ARCHAEOLOGY AND SCIENCE**

**International Conference, Athens, 22-23 March 2010**

Organized by  
The Netherlands Institute at Athens (NIA)  
and the Hellenic Society of Archaeometry (EAE)

*First Circular*

May 2009

Diet and subsistence occupy a central position in archaeologists' attempts to reconstruct the economic and social organization, as well as the cultural orientation of past societies. The last decades have witnessed the adoption and refinement of various scientific approaches which allow us to reconstruct variation in past diet as well as the role of food in social interaction. These are exciting developments, but the proliferation of analytical techniques also brings in a certain danger, namely over-specialization and a fragmentation of the field. It is therefore becoming imperative to reflect on the integration of scientific and archaeological data, and to compare different methods of analysis more explicitly.

For this reason, we decided to organize a conference which will focus precisely on this topic. The main aims of the Conference are:

- To explore the relation between subsistence, economy and society in the prehistoric Aegean and the ancient world
- To examine diet, subsistence and economy *by integrating and comparing* results of different analytical methods such as
  - the analysis of animal remains
  - the analysis of plant remains
  - the analysis of human remains, and more specifically
    - stable isotope analysis
    - dental analysis
    - dental microwear analysis
  - organic residue analysis
- To place the data in their economic, social and cultural context
- To formulate new research questions and select appropriate sampling procedures
- To explore the legal framework and the regulations about sampling procedures, especially in cases of destructive sampling.

We would like to stress that only papers with an *explicitly comparative* content will be accepted. Papers will therefore have to compare different methods and to integrate scientific results with archaeological data. Papers presenting results obtained by means of one method of analysis (even if they cover different periods or regions) will *not* be accepted.

Shorter contributions can be presented in the form of posters. We would like to emphasize, however, that posters also need to have a *comparative* content.

Please note:

- The official languages of the Conference are English and Greek.
- The Conference covers the prehistoric and historical periods to the end of the Roman era.
- As the demarcation of ‘the Greek world’ changes through time, we would like to specify that the Conference covers the northern and southern Greek mainland and the Aegean islands during the prehistoric period. In the historical periods we focus on the same area, although we may include a few papers on the eastern Mediterranean to the margins of the Hellenistic world and the Roman empire.
- Participants will be allotted 15-20 minutes to allow time for discussion (10 minutes per contribution).
- Technical specifications about the posters will be sent in the 2<sup>nd</sup> Circular.
- The Proceedings of the Conference will be published.

For more information on the conference please check the website of the Netherlands Institute at Athens (<http://www.nia.gr>), or write to Sofia Voutsaki ([s.voutsaki@rug.nl](mailto:s.voutsaki@rug.nl)).

**The conference will cover accommodation for the speakers. We hope we will be in the position to cover the speakers’ travel costs as well (at least partly). However, as our funds are limited, we would like to ask you to apply for financial support in the first instance to your own institution.**

Please fill in the Registration Form (overleaf) and return it *by 30 August 2009* to the Conference Secretariat:

Mrs Emmy Makri  
Netherlands Institute at Athens  
Makri 11, 117 42 Athens  
Tel (00 30) 210 9210760  
FAX (00 30) 210 9210770  
E-mail [nia@nia.gr](mailto:nia@nia.gr)

You will be notified whether your paper / poster proposal has been accepted by *30 September 2009*.

Looking forward to hearing from you,

With best wishes

Sofia Voutsaki  
(on behalf of the Organizing Committee)

THE ORGANIZING COMMITTEE

Prof. John Bintliff	University of Leiden	<a href="mailto:J.L.Bintliff@arch.leidenuniv.nl">J.L.Bintliff@arch.leidenuniv.nl</a>
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**SUBSISTENCE, ECONOMY AND SOCIETY IN THE GREEK WORLD**  
**Improving the integration of archaeology and science**

**International Conference, Athens, 22-23 March 2010**

Registration form

Surname:.....

Name:.....

Title:.....

Affiliation:.....

Address:.....

.....

Tel.:.....

FAX:.....

E-mail:.....

I would like to attend the conference      YES

I would like to attend and give a paper      YES /NO

I would like to attend and present a poster      YES / NO

Authors: *(please note: all authors of co-authored papers have to register, if they plan to attend the conference)*

.....

Provisional title of paper:

.....

.....

Provisional title of poster:

.....

.....

Abstract of paper / poster (ca. 200 words):



## ΔΙΑΤΡΟΦΗ, ΟΙΚΟΝΟΜΙΑ ΚΑΙ ΚΟΙΝΩΝΙΑ ΣΤΟΝ ΕΛΛΗΝΙΚΟ ΧΩΡΟ Προς μια καλύτερη σύζευξη αρχαιολογίας και αρχαιομετρίας

Διεθνές Συνέδριο, Αθήνα, 22-23 Μαρτίου 2010

Διοργάνωση  
Ολλανδικό Ινστιτούτο Αθηνών (NIA)  
Ελληνική Αρχαιομετρική Εταιρεία (ΕΑΕ)

### *Πρώτη Εγκύκλιος*

Μάιος 2009

Η διατροφή και οι τρόποι εξασφάλισης, παρασκευής και ανταλλαγής της τροφής κατέχουν κύρια θέση στην προσπάθεια να ερμηνεύσουμε την οικονομική και κοινωνική οργάνωση, αλλά και την πολιτισμική ταυτότητα προϊστορικών και ιστορικών κοινωνιών. Τις τελευταίες δεκαετίες έχουν εφαρμοστεί πολλές νέες επιστημονικές μέθοδοι που μας επιτρέπουν να αναπαραστήσουμε πιθανές διαφορές στη διατροφή κοινωνικών ομάδων, καθώς και τη σημασία της τροφής στις κοινωνικές σχέσεις και ανταλλαγές. Αναμφισβήτητα οι εξελίξεις αυτές είναι πολύ θετικές, συγχρόνως όμως στον πολλαπλασιασμό αναλυτικών μεθόδων ελλοχεύουν και κάποιοι κίνδυνοι, μεταξύ των οποίων κυριότεροι είναι η υπερβολική εξειδίκευση και η κατάτμηση του γνωστικού πεδίου.

Αυτός είναι ο λόγος που μας οδήγησε να οργανώσουμε ένα συνέδριο πάνω στο συγκεκριμένο θέμα. Οι στόχοι του Συνεδρίου είναι οι εξής:

- να διερευνηθεί η σχέση διατροφής, οικονομίας και κοινωνίας στον ελληνικό χώρο στις προϊστορικές και ιστορικές περιόδους μέσω της *σύγκρισης και αντιπαραβολής* διαφορετικών αρχαιομετρικών μεθόδων, όπως είναι:
  - η ζωοαρχαιολογία
  - η αρχαιοβοτανική ανάλυση
  - η φυσική ανθρωπολογία, και πιο συγκεκριμένα:
    - η ανάλυση σταθερών ισοτόπων άνθρακα και αζώτου
    - η μελέτη οδοντικών παθήσεων
    - η ανάλυση μικροϊχνών αποτριβής
  - η ανάλυση οργανικών υπολειμμάτων
- να ενταχθούν τα αποτελέσματα αρχαιομετρικών αναλύσεων και αρχαιολογικών ερευνών στο οικονομικό, κοινωνικό και πολιτισμικό πλαίσιο της υπό έρευνας εποχής
- να τεθούν νέα ερωτήματα και να επιλεγούν οι κατάλληλες μέθοδοι δειγματοληψίας
- να συζητηθεί το θεσμικό πλαίσιο των συγκεκριμένων αρχαιομετρικών εφαρμογών και των μεθόδων δειγματοληψίας, κυρίως όταν πρόκειται για καταστροφική δειγματοληψία

Θα θέλαμε να τονίσουμε ότι θα γίνουν δεκτές ανακοινώσεις μόνον εάν έχουν *σαφώς συγκριτικό* χαρακτήρα, δηλαδή εάν βασίζονται στην αντιπαραβολή διαφορετικών μεθόδων και στη σύζευξη αρχαιομετρικών και αρχαιολογικών δεδομένων. Ανακοινώσεις που στηρίζονται σε μία μόνον μέθοδο δεν θα γίνουν δεκτές, ακόμη και εάν καλύπτουν διαφορετικές περιόδους ή περιοχές.

Θα είναι δυνατό να παρουσιαστούν πιο σύντομες μελέτες υπό μορφήν posters, οι οποίες όμως επίσης πρέπει να στηρίζονται σε κάποια *συγκριτική* ανάλυση.

Κάποιες πρόσθετες πληροφορίες:

- Επίσημες γλώσσες του Συνεδρίου είναι τα Αγγλικά και τα Ελληνικά.
- Το Συνέδριο καλύπτει την προϊστορική περίοδο και τις ιστορικές περιόδους μέχρι το τέλος της Ρωμαϊκής εποχής
- Το Συνέδριο καλύπτει τον ελληνικό χώρο. Καθώς τα όριά του διακυμαίνονται κατά τη διάρκεια των αιώνων, προσδιορίζουμε ότι στην προϊστορική περίοδο περιλαμβάνονται ο βόρειος και νότιος ελλαδικός χώρος και τα νησιά του Αιγαίου. Στις ιστορικές περιόδους η έμφαση παραμένει στον ελλαδικό χώρο και στο Αιγαίο, αλλά θα συμπεριλάβουμε και λίγες ομιλίες για την ευρύτερη περιοχή της ανατολικής Μεσογείου μέχρι τις εσχατιές του Ελληνιστικού κόσμου και της Ρωμαϊκής αυτοκρατορίας.
- Οι ομιλίες δεν πρέπει να υπερβαίνουν τα 15-20 λεπτά, ώστε να υπάρξει αρκετός χρόνος (10 λεπτά) για συζήτηση.
- Τεχνικές οδηγίες για τα posters θα σταλούν στη 2<sup>η</sup> Εγκύκλιο.
- Τα Πρακτικά του Συνεδρίου θα δημοσιευτούν.

Για περισσότερες πληροφορίες μπορείτε να απευθυνθείτε στη Σοφία Βουτσάκη ([s.voutsaki@rug.nl](mailto:s.voutsaki@rug.nl)), ή να επισκεφθείτε την ιστοσελίδα του Ολλανδικού Ινστιτούτου Αθηνών (<http://www.nia.gr>).

Το Συνέδριο θα καλύψει τη διαμονή των ομιλητών στην Αθήνα. Θα προσπαθήσουμε επίσης να καλύψουμε (εν μέρει τουλάχιστον) τα έξοδα μετακίνησης, αλλά καθώς οι οικονομικοί πόροι του συνεδρίου είναι περιορισμένοι, ζητούμε από τους ομιλητές να διερευνήσουν και άλλες πηγές (π.χ. πανεπιστήμια, ερευνητικά ιδρύματα, κλπ.).

Όσοι ενδιαφέρονται να μετάσχουν στο Συνέδριο παρακαλούνται να επιστρέψουν μέχρι τις 30 Αυγούστου 2009 το δελτίο συμμετοχής συμπληρωμένο, στη γραμματεία του Συνεδρίου:

Κα Εμμου Μακρή  
Ολλανδικό Ινστιτούτο Αθηνών  
Μακρή 11, 117 42 Αθήνα  
Τηλ (00 30) 210 9210760  
FAX (00 30) 210 9210770  
E-mail [nia@nia.gr](mailto:nia@nia.gr)

Θα σας ειδοποιήσουμε εάν η ανακοίνωσή σας έγινε δεκτή μέχρι τις 30 Σεπτεμβρίου 2009.

Ελπίζουμε να σας δούμε στην Αθήνα στις 22 Μαρτίου 2010 !

Με συναδελφικούς χαιρετισμούς,

Σοφία Βουτσάκη  
(εκ μέρους της Οργανωτικής Επιτροπής)  
Η ΟΡΓΑΝΩΤΙΚΗ ΕΠΙΤΡΟΠΗ

Prof. John Bintliff	Πανεπιστήμιο Leiden	<a href="mailto:J.L.Bintliff@arch.leidenuniv.nl">J.L.Bintliff@arch.leidenuniv.nl</a>
Prof. René Cappers	Πανεπιστήμιο Groningen	<a href="mailto:R.T.J.Cappers@rug.nl">R.T.J.Cappers@rug.nl</a>
Δρ Βασίλης Κυλίκογλου	Εθνικό Κέντρο Έρευνας Φυσικών Επιστημών «Δημόκριτος»	<a href="mailto:kilikog@ims.demokritos.gr">kilikog@ims.demokritos.gr</a>
Dr. Wietske Prummel	Πανεπιστήμιο Groningen	<a href="mailto:W.Prummel@rug.nl">W.Prummel@rug.nl</a>
Dr. Christiane Tytgat	Ολλανδικό Ινστιτούτο Αθηνών	<a href="mailto:kristytgat@nia.gr">kristytgat@nia.gr</a>
Δρ Σουλτάνα Μαρία Βαλαμώτη	Αριστοτέλειο Πανεπιστήμιο Θεσσαλονίκης	<a href="mailto:sval@hist.auth.gr">sval@hist.auth.gr</a>
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## ΔΙΑΤΡΟΦΗ, ΟΙΚΟΝΟΜΙΑ ΚΑΙ ΚΟΙΝΩΝΙΑ ΣΤΟΝ ΕΛΛΗΝΙΚΟ ΧΩΡΟ Προς μία καλύτερη σύζευξη αρχαιολογίας και αρχαιομετρίας

Διεθνές Συνέδριο, Αθήνα, 22-23 Μαρτίου 2010

Δελτίο συμμετοχής

Επίθετο:.....

Όνομα:.....

Τίτλος:.....

Θέση:.....

Διεύθυνση:.....

.....

Τηλ.:.....

FAX:.....

E-mail:.....

Θα ήθελα να παρακολουθήσω το συνέδριο ΝΑΙ

Θα ήθελα να κάνω μία ομιλία ΝΑΙ / ΟΧΙ

Θα ήθελα να παρουσιάσω ένα poster ΝΑΙ / ΟΧΙ

Συγγραφείς (στην περίπτωση ομιλιών / posters που είναι αποτέλεσμα συνεργασίας,  
παρακαλούμε να δηλώσουν συμμετοχή όλοι οι συγγραφείς που θα παρακολουθήσουν το  
συνέδριο)

.....

Προσωρινός τίτλος ομιλίας:

.....

.....

Προσωρινός τίτλος poster:

.....

.....

Περίληψη ομιλίας / poster (περ. 200 λέξεις):



**CONFERENCE OF THE SWEDISH  
INSTITUTE AT ATHENS, "BONES,  
BEHAVIOUR AND BELIEF. THE  
OSTEOLOGICAL EVIDENCE AS A  
SOURCE FOR GREEK RITUAL  
PRACTICE", ATHENS, 10TH-12TH  
SEPTEMBER, 2009**

The Swedish Institute at Athens is organizing a conference entitled "Bones, behaviour and belief. The osteological evidence as a source for Greek ritual practice". The event will take place in Athens, on the 10th-12th of September 2009.

The purpose of the conference is to highlight the role and contribution of the osteological evidence for our understanding of Greek sacrificial ritual, especially from a methodological perspective. It also aims at a discussion of the relation of the bone material to other source categories – texts, inscriptions, images and archaeological remains other than bones.

Of central interest are issues approachable from osteological evidence only and instances where the bone material presents a picture different from that derived from the written or pictorial sources. A group of prominent osteologists working on evidence from sanctuaries and cult places will present papers addressing questions of ritual practices. To stimulate an increased integration of osteology in the study of Greek cult in the future and to highlight the relation of various categories of sources to each other, a panel of leading scholars working on Greek religion mainly thought the use of non-osteological material will participate in the discussions as well as in the concluding table ronde.

Confirmed speakers include Gerhard Forstenpointner (Wien), Gunnel Ekroth (Stockholm), Valasia Isaakidou (Sheffield), Paul Halstead (Sheffield), Maria Vretemark (Museum of Västergötland), Armelle Gardeisen (Latté), Michel MacKinnon (Winnipeg), Dimitra Mylona (Rethymnon), François Poplin (Paris), Ola Magnell (Lund), Martine Leguilloux (Var), Hélène Siard (Paris), Sabine Sten (Gotland), Emmanulle Vila (Lyon).

Invited discussants: Robin Hägg (Göteborg), Stella Georgoudi (Paris), Scott Scullion (Oxford), Francis Prost (Paris), Véronique Mehl (Rennes).

The conference will be held at the Italian School, Athens and all interested listeners are welcome to attend.

For further information, please contact [gunnel.ekroth@antiken.su.se](mailto:gunnel.ekroth@antiken.su.se) or [jenny.wallenstein@sia.gr](mailto:jenny.wallenstein@sia.gr)

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**ICAF 28TH CONFERENCE “*FISH AND SEAFOOD*”, ANTHROPOLOGICAL AND NUTRITIONAL PERSPECTIVES, KAMILARI CRETE GREECE, 31<sup>ST</sup> MAY TO 6<sup>TH</sup> JUNE 2009**

**Scientific Organisation**

- Prof. Nikolaos I. **Xirotiris**, Laboratory of Anthropology Demokritos University of Thrace Komotini [e-mail](#)
- As. Prof. Antonia **Matala**, Department of Nutrition and Dietetics [Harokopio University Athens](#) [e-mail](#)
- As. Prof. Nena **Galanidou**, [Department of History and Archaeology University of Crete Rethymno](#) [e-mail](#)
- Kostas **Zafeiris**, PhD, Laboratory of Anthropology Demokritos University of Thrace Komotini
- Christina **Papageorgopoulou**, PhD, Seminar f. Ur- Fruehgeschichte, University of Basel, Switzerland

**Secretariat**

- Christos **Valsamis**, Laboratory of Anthropology Demokritos University of Thrace Komotini
- Amelie **Alterauge**, ERASMUS Student, University of Freiburg

**THEMES OF THE CONFERENCE**

**The meeting aims to provide a multidisciplinary approach to the role of fish and seafood in the human diet from ancient times to the present. Contributions will cover, but will not necessarily be restricted to, one of the following themes:**

1. Fish and seafood as a dietary component
2. Fish biology in relation to nutritional value
3. Fish and palaeodiets
4. Fish and seafood in archaeology and art
5. Symbolic and ideological uses of fish
6. Impact of fish and seafood consumption on health
7. Culinary aspects of fish and preservation techniques
8. Safety aspects of fish consumption
9. The problem of fish availability in the near future
10. Industrial production of fish

SUNDAY 31.05.2009

20.30- Opening Reception

MONDAY 01.06.2009

09.00 - 10.00 Registration

10.00 - 14.00

Galanidou N., Matalas A.L. and N. Xirotiris  
Opening Remarks: Fish and Seafood: A multidisciplinary Approach  
Ethnological Aspects  
Chairman: Wulf Schiefelhovel

Aubaile-Sallenave, F.  
Fish in the Arab Cultures of the Mediterranean  
Garine, I. de  
Fishing and Symbols among the Masa and Musey

Break 30 min.

Harrison, G. W. M.  
Symbolic and Ideological Uses of Fish: The Romanisation of Fish  
Kaiser, P.  
Ichthys and Fugu – Interpretation of Symbols Concerning its Religious Background  
Maschner, H. D. G.  
Fish, Sea Mammals and the Aleut of the North Pacific Ocean: Archaeology as Heritage  
and Long Term Ecology  
Discussion

14.00-18.00 Lunch, Free Time

18.00-20.00

Ethnological Aspects  
Chairman: Herbert Maschner

Mowafy, M.  
Fish Symbolism and Mythology  
Oishi, T.  
Evolution of Fishing and Ichthyophagy in Inland African Tropical Forest: From Ethno-  
ichthyology of the Bakwele Farmers(Bantu) and its Preliminary Comparison to the Baka  
Hunter-Gatherers(Pygmy), South-East Cameroon  
Prinz, A.  
Fishing with Plant-Poisons among the Azande, Northeast Congo.  
Reedy-Maschner, K.  
Seafood as Life: The Aleut Marine Economy in Global Perspective  
Discussion

20.30- Dinner offered by the Mayor of Tymbaki

TUESDAY 02.06.2009

09.00-14.00

Ethnological Aspects  
Chairman: George Harrison

Saruhanoglu, F.  
Sea Food Consumption in Ottoman Istanbul  
Schiefelhovel, W.  
Bwarita bwena - The Sea in the Life of Trobriand Islanders, Solomon Sea, Papua New  
Guinea  
Discussion

Break 30 min.

Past, Present and Future of Seafood  
Chairman: Peter Collinson

Duhart, F.

The Turbot and the Pilchard: Sea Product Consumption in Eighteenth Century South-West France

Kraykovskiy, A. V.

The Fish of Modernization and the Modernization of Fish: the Case of European Herring in Russia

Kutalek, R.

Cultivation of Seaweed in Zanzibar, Tanzania

Macbeth, H.

A Famous Mediterranean Seafood spawned on Scotland's Atlantic Coast

Discussion

Break 30 min.

Ntakimazi, G.

Lake Tanganyika: Global Climate Change and Local Human Activities Threaten Fish Stocks

Tzovenis, I., Grigorakis, K., Nengas, I. & Y. Cladas

Seafood against all Odds

Discussion

14.00-18.00 Lunch, Free Time

18.00-20.00

Posters Session

Chairman: Antonia L. Matalas

Presentation of Posters and Discussion

20.30- Dinner

WEDNESDAY 03.06.2009

09.00-14.00

Archaeology and Archaeozoology

Chairman: Igor de Garine

Alvarez-Fernandez, E., Fernandez-Garcva, R., Gruet, Y., Ontapson-Peredo, R. & E. Rosellσ-Izquierdo

Marine Resources of the early Farmers in Cantabrian Plain: Los Gitanos Cave Samano, Cantabria)

Eleftheriou, A.

Marine Life in Minoan Times

Eleftheriou, A., Karali, I., Galanaki, C. & I. Triantafillidi

Study of Material of Marine Origin from the EM I Necropolis in Gournes

Francis, J.

A Re-evaluation of Fish Installations in Roman Crete

Discussion

Break 30 min.



Jones, A. K. G.

Without title

Mylona, D.

Fish-Eating in Ancient Greece. Edible Fish Categories beyond the Linnaean

Taxonomy

Powell, J.

Fishing in the Past – the Archaeological Record

Discussion

14.00-18.00 Lunch, Free Time

Chairman: Anastasios Eleftheriou

18.00-21.00

Teffeteller, A.

Fish, Barley, and the Head of Zeus: what is Sacred in Homeric Epic

Theodoropoulou, T. & A. Papathanassiou

Human Bones, Fish Bones: An Interdisciplinary Approach to Fish Exploitation and Consumption in Prehistoric Aegean

Veropoulidou, R. & A. Vasilakis

Exploring the Role of Molluscs in Diet: Preliminary Results from the Shell Assemblage of the Prepalatial Trypiti, Southern Crete

Mandalaki, S.

Roman Fish Tanks of Chersonessos

Discussion

Break 30 min.

Mpredaki, M.

The nutrition the ancient Greeks and the role of seafood in it

Voultsiadou, E., Koutsoubas, D. & M. Achparaki

Bivalve Molluscs in the Diet and Medicine of Ancient Greeks

Zohar, I. & D. E. Bar-Yosef Mayer

The Value of Aquatic Resources in Antiquity: Cultural Continuity or Cultural Revolution?

Discussion

21.00- Dinner

THURSDAY 04.06.2009

09.00-14.00

Human Evolution

Chairman: Nena Galanidou

Bender-Oser, N. & R. Bender

Max Westenhofer's Aquatic Hypotheses: Speculations on an Intensive Early Hominid Exploitation of Marine, Riverine and Lacustrine Food Resources

Bender, P. R., Morgan, E. & N. Bender-Oser

The Hypothetical Exploitation of Aquatic Food Resources in early Hominid Evolution

Munro, S. & M. Verhaegen

Pachyosteosclerosis Suggests Archaic Homo Exploited Sessile Littoral Foods

Verhaegen, M. & S. Munro

Littoral Diets in early Hominoids and/or early Homo?

Discussion

Break 30 min.

#### Fishing Tourism

Cladas, Y. & N. Hofmann.

Fishing Tourism & Environment

Collinson, P.

Fishing, Tourism and the EU in County Donegal

Cornelius, M.

The Fish inside my Ear

Discussion

14.00- Lunch at Faistos, offered by the XENIA FAISTOS Inc.

Guided archaeological tour to the Minoan site of Faistos

21.00- Dégustation de la cuisine locale Offered by the Cultural Association of Kamilari and other Cultural Associations of the District Messara

#### FRIDAY 05.06.2009

08.00 Departure to Herakleion –

Guided archaeological tour to the Minoan site of Knossos and the Archaeological Museum

Lunch offered by the Mayor of Herakleion

Free Time to visit the Town of Herakleion

19.30 Dinner by the seafront offered by the fishermen's association of the town of Hersonissos

Departure to Kamilari

#### SATURDAY 06.06.2009

Departure to Herakleion Airport

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# **CONFERENCE “E-LEARNING ARCHAEOLOGY”, AMSTERDAM, BOTANICAL GARDENS, OCTOBER 2-3, 2009**

## **General information**

In 2009, the University of Amsterdam will host a two day conference within the framework of the Leonardo da Vinci project:

*E-learning as a tool of knowledge transfer in the field of protection and management of archaeological heritage.*

The project has consolidated a European co-operation in education and training in the sector of protection and management of archaeological heritage resulting in an e-learning course implementing innovative solutions and upgrading vocational skills in this sector at the European level.

The team will present the project results and is eager to hear your experiences with e-learning in archaeology.

Proceedings will be produced before the conference.

## **Programme in short**

*Friday Oct. 2, 2009*

- plenary session ‘*Education and E-learning in Archaeology*’
- plenary session ‘*E-learning as a tool of knowledge transfer in the field of protection and management of archaeological heritage*’
- demonstration of the e-learning course

*Saturday Oct. 3, 2009*

- plenary session ‘*future: highlights and challenges*’
- excursion

## **Papers**

Delegates wishing to present a paper on recent or current projects on e-learning and education in archaeology are requested to send their title before July 1st directly to Dr. Heleen van Londen, University of Amsterdam at [marbles@tiscali.nl](mailto:marbles@tiscali.nl)

## **Subscriptions and practical information**

There is no conference fee. We would appreciate your registration by emailing [marbles@tiscali.nl](mailto:marbles@tiscali.nl)

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**ARCHAEOMETALLURGY**  
**CONFERENCE, UNIVERSITY OF**  
**BRADFORD, 10TH-12TH NOVEMBER**  
**2009**

Dr Gerry McDonnell is leaving the University of Bradford's Division of Archaeological Science. The overall aim of this conference is to therefore celebrate the research carried out by Gerry McDonnell during his time at Bradford, and to wish him well for his future research. The first day, which is open to all, will focus on research carried out at Bradford University, bringing back many students and researchers associated with Gerry and Bradford. Following this day the Historical Metallurgy Society will hold a Research in Progress Meeting. This is an opportunity for anyone to present the results from current historical metallurgy or archaeometallurgy research in progress, in a friendly and supportive environment. We hope to be able to welcome a broad, national and international participation.

The Abstract Deadline has now moved to the 26th of June!

For more information visit the conference website:

[www.archaeomaterials.me.uk/conf/archmet09.html](http://www.archaeomaterials.me.uk/conf/archmet09.html) or the HMS website [www.hist-met.org/](http://www.hist-met.org/) or email me at [eleanor.blakelock@ironsmelting.net](mailto:eleanor.blakelock@ironsmelting.net)

Alternatively you can write to me at the address below:

\*\*\*\*\*

Eleanor Blakelock  
Division of AGES  
University of Bradford  
West Yorkshire  
BD7 1DP  
UK

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## **SMEIA 2010 SECOND CALL**

Dear all,

please note the Abstract Deadline has now moved to the 30th of June!

The Symposium on the Metallurgy of the European Iron Age will take place at the Reiss-Engelhorn-Museen, in Mannheim, Germany from 20-22 April 2010.

Abstracts of 200-400 words should be submitted to: [SMEIA@cez-archaeometrie.de](mailto:SMEIA@cez-archaeometrie.de).

For more informations see: <http://www.cez-archaeometrie.de/en> see events

Roland

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## **CALL FOR PAPERS: POCA 2009, 19-21 NOVEMBER, OXFORD**

The University of Oxford will be the host of the 9th Annual Meeting in Postgraduate Cypriot Archaeology (POCA 2009). The event will take place on the 19th - 21st of November 2009 at the Lecture Theatre of the Ioannou Centre for Research in Classical and Byzantine Studies (map: <http://www.communitywalk.com/oxford/uk/map/353102>), Oxford.

The meeting aims to bring together graduate students and young scholars from various institutions, who are conducting research in archaeological, anthropological or historical aspects of the material culture of ancient Cyprus. The conference will provide an excellent opportunity for postgraduates and young scholars to present their work, exchange ideas and interact with people who carry out research in Cypriot Archaeology.

POCA 2009 will open with a plenary lecture by Professor Edgar Peltenburg from the University of Edinburgh entitled "Text meets material culture in Late Bronze Age Cyprus". The keynote lecture will be presented at the Lecture Theatre of the Ioannou Centre for Research in Classical and Byzantine studies at 5 pm on Thursday 19th of November. A reception will follow Professor Peltenburg's lecture.

We welcome the submission of papers from graduate students and young scholars in Cypriot Archaeology. If you would like to present a paper at POCA 2009, or simply attend the conference, please send an email to [artemis.georgiou@merton.ox.ac.uk](mailto:artemis.georgiou@merton.ox.ac.uk) providing the required details (Name and Surname, Affiliation to Institution or University, Degree or Position) and including the title of your paper and an abstract of around 150-200 words.

The deadline for the submission of the titles and abstracts is the 15th August 2009.

For further information or any enquiries please contact Artemis Georgiou ([artemis.georgiou@merton.ox.ac.uk](mailto:artemis.georgiou@merton.ox.ac.uk)) or visit the conference's website: [http://www.arch.ox.ac.uk/current\\_students/graduates/conferences/poca2009](http://www.arch.ox.ac.uk/current_students/graduates/conferences/poca2009)

Best regards,  
Artemis Georgiou

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## **ΘΕΣΕΙΣ ΕΡΓΑΣΙΑΣ/ΥΠΟΤΡΟΦΙΕΣ – JOB VACANCIES/FELLOWSHIPS**



**Πανεπιστήμιο Κύπρου,  
Τμήμα Πολιτικών Μηχανικών και Μηχανικών Περιβάλλοντος**

### **ΘΕΣΗ ΜΕΤΑΠΤΥΧΙΑΚΟΥ ΣΥΝΕΡΓΑΤΗ**

Το Τμήμα Πολιτικών Μηχανικών και Μηχανικών Περιβάλλοντος του Πανεπιστημίου Κύπρου δέχεται βιογραφικά σημειώματα για την πλήρωση μίας (1) κενής θέσης Μεταπτυχιακού Συνεργάτη (Πλήρους Απασχόλησης) για το Ερευνητικό Πρόγραμμα:

#### **ΝΕΑ ΥΠΟΔΟΜΗ/ΝΕΚΥΠ/0308**

Το ερευνητικό πρόγραμμα αφορά στη μελέτη παραδοσιακών δομικών υλικών (ωμόπλινθων, δομικών λίθων και κονιαμάτων) με τη χρήση αναλυτικών (XRD, XRF, TG/DTA, Ποροσιμετρία) καθώς επίσης και συμβατικών μεθόδων προσδιορισμού των φυσικοχημικών και μηχανικών χαρακτηριστικών τους. Ο/η υποψήφιος/α αναμένεται να ασχοληθεί με το χαρακτηρισμό των πιο πάνω υλικών και τη μελέτη των φαινομένων διάβρωσης που τα καταπονούν. Ως εκ τούτου, αναμένεται να διαθέτει εμπειρία στη χρήση μιας ή περισσότερων από τις προαναφερθείσες τεχνικές ανάλυσης υλικών και να έχει ασχοληθεί με δομικά υλικά στο παρελθόν. Το πρόγραμμα στοχεύει σε έρευνα υψηλού επιπέδου και προβολή των αποτελεσμάτων σε διεθνή επιστημονικά συνέδρια και περιοδικά.

Οι υποψήφιοι θα πρέπει να είναι κάτοχοι διδακτορικού διπλώματος σε σχετική με το αντικείμενο Επιστήμη (π.χ. Επιστήμη Υλικών, Πολιτική Μηχανική, Γεωλογία, Χημική Μηχανική κ.α.).

Η μισθολογική τοποθέτηση θα είναι μεταξύ της 4<sup>ης</sup> και 6<sup>ης</sup> βαθμίδας της κλίμακας Α8 (€2,260.68 – €2,453.39). Το πρόγραμμα δεν προνοεί για 13<sup>ο</sup> μισθό. Η αρχική πρόσληψη είναι με σύμβαση για χρονική περίοδο ενός (1) έτους, με δυνατότητα ανανέωσης για άλλα δύο (2) έτη.

Οι ενδιαφερόμενοι παρακαλούνται να υποβάλουν:

- α) πλήρες βιογραφικό σημείωμα στα Ελληνικά ή/και Αγγλικά
- β) αντίγραφα πτυχίων και αναλυτικές βαθμολογίες
- γ) περίληψη διδακτορικής διατριβής
- δ) λίστα σχετικών δημοσιεύσεων
- ε) ονόματα δύο (2) ατόμων (κατά προτίμηση ακαδημαϊκών) από τους οποίους δυνατό να ζητηθούν συστατικές επιστολές.

Όλα τα πιο πάνω θα πρέπει να παραδοθούν δια χειρός στην Υπηρεσία Ανθρώπινου Δυναμικού του Πανεπιστημίου Κύπρου, στο Κτίριο Συμβουλίου – Συγκλήτου Αναστάσιος Γ. Λεβέντη (Πανεπιστημιούπολη), Τ.Θ. 20537, 1678 Λευκωσία το αργότερο

μέχρι την Παρασκευή 3 Ιουλίου 2009 ή και να σταλούν ταχυδρομικώς σε φάκελο ο οποίος θα φέρει ευδιάκριτη ταχυδρομική σφραγίδα ημερομηνίας, το αργότερο μέχρι 3 Ιουλίου 2009. Θα θεωρούνται δε εμπρόθεσμα νοουμένου ότι θα φθάσουν στην Υπηρεσία Ανθρώπινου Δυναμικού, το αργότερο μέχρι τις 10 Ιουλίου 2009 (με ευδιάκριτη σφραγίδα φακέλου 3 Ιουλίου 2009), με αποκλειστική ευθύνη για τούτο του ενδιαφερομένου.

Για περισσότερες πληροφορίες οι ενδιαφερόμενοι μπορούν να επικοινωνήσουν με τον υπεύθυνο του ερευνητικού προγράμματος, Λέκτορα Ιωάννη Ιωάννου (τηλ. 22-892257, email: [ioannis@ucy.ac.cy](mailto:ioannis@ucy.ac.cy)).

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**Καλλιπόλεως 75, Τ.Θ. 20537, 1678 Λευκωσία – Κύπρος - Τηλ. +357 22 892249, Φαξ +357 22 892295**

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## **FULBRIGHT OPPORTUNITIES IN ARCHAEOLOGY**

From March to August 1, 2009, U.S. faculty and professionals are invited to apply for \*Fulbright scholar grants at [www.cies.org](http://www.cies.org) . For monthly updates, write us at [outreach@cies.iie.org](mailto:outreach@cies.iie.org) for a complimentary subscription to *The Fulbright Scholar News*, an electronic newsletter.

*\*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. Since 1946, the Fulbright Program has provided more than 286,000 participants from over 155 countries with the opportunity to study, teach and conduct research, to exchange ideas and contribute to finding solutions to shared international concerns. For more information, visit <http://fulbright.state.gov/>*

### **Fulbright Scholar Program for US Faculty and Professionals for 2010-2011 is open**

The Fulbright Scholar Program offers **six grants in lecturing, research or combined lecturing/research awards in archaeology, including one Fulbright Distinguished Chair**. Even better, faculty and professionals in archaeology also can apply for one of the **144 “All Discipline”** awards open to all fields.

What does Fulbright offer in archaeology? Here are a few of the awards for 2010-2011:

**Middle East and North Africa** – Award #0417 – Middle East and North Africa Regional Research Program – 3-9 months in two or more countries

**France** – Award #0251 – French studies, arts and humanities

**Mauritius** – Award #0080 – Museum and Heritage studies

**Taiwan** – Award #0181 – Southeast Asia and North America

**Distinguished Chair:** Award #0006 - Fulbright-Karl Franzens University Graz Distinguished Chair in Cultural Studies.

The application deadline is August 1, 2009. U.S. citizenship is required. For a full, detailed listing of all Fulbright programs awards and other eligibility requirements visit our website at [www.cies.org](http://www.cies.org) <<http://www.cies.org/>> , or send a request for materials to [scholars@cies.iie.org](mailto:scholars@cies.iie.org) <<mailto:scholars@cies.iie.org>> .

## **THE MEDITERRANEAN** **ARCHAEOLOGICAL TRUST, GRANTS** **TO ASSIST PUBLICATION**

The Mediterranean Archaeological Trust, set up in 1959 for the promotion of the study of archaeology, invites applications for grants, made on a competitive basis, for expenses in 2010-11, in the preparation for publication of material from archaeological \*fieldwork\* in the Mediterranean world, \*excluding\* subventions to publishers and publication of material not from a specific excavation. Within the terms of the Trust, priority may be given to publication of Bronze Age sites.

Grants for any amount, however small, will be considered, provided they expedite publication. The grants do not normally exceed £ 3000.

Applications comprising a 2000-word (\*maximum\*) description of the proposed work and an outline budget, together with two referees' names, should be sent \*no later than 15 January 2010\*, to:

\*\*\*\*\*

Professor Sir John Boardman  
(Mediterranean Archaeological Trust)  
Classics Centre  
66 St. Giles  
Oxford OX1 3LU  
G.B.  
[or \*also\* by fax to 01865 610237; \*NOT\* by e-mail]

\*\*\*\*\*

The references (which are \*essential\*) should be sent directly by the referees (to meet the deadline of 15 January), or accompany the application in a sealed envelope. Successful applicants will be informed by around the end of March 2010.

# **THE AMERICA FOR BULGARIA FOUNDATION POSTDOCTORAL FELLOWSHIP IN ARCHAEOLOGY**



Dear Colleagues,

Please circulate the attached announcement for a postdoctoral fellowship and encourage qualified candidates to apply.

Sincerely yours,

William A. Parkinson  
Assistant Curator of Eurasian Anthropology

## **The America for Bulgaria Foundation Postdoctoral Fellowship in Archaeology:**

The Department of Anthropology at The Field Museum invites applications for the America for Bulgaria Foundation Postdoctoral Fellowship starting in fall 2009. We invite applications from scholars who have completed the Ph.D. recently with a specialization in the archaeology or bioanthropology of the Balkan region. The position is currently funded for one academic year (nine months). The ABF Postdoctoral Fellow will be expected to carry out independent research resulting in significant publications, as well as to assist with the establishment and implementation of a formal proposal procedure for funding collaborative archaeological and bioarchaeological research, as well as site and museum preservation and improvement in Bulgaria. Ideally, the Fellow will be a Bulgarian national who intends to pursue a scholarly career in Bulgaria. We seek scholars whose work has broad appeal and will take advantage of the collections and research facilities available at The Field Museum and elsewhere in the Chicagoland area. The salary for this position will be \$40,000 per year, plus benefits, and \$2,000 in research funds. Review of applications will begin immediately and will continue until a decision is made. Eligibility: Applicants must have completed all requirements for the Ph.D. (including filing the dissertation) by time of application, and must demonstrate advanced proficiency in the English language. Applications: Please send, by hard copy only, the following:

- 1) a letter of application, 2) a statement of research interests and goals to be completed during the tenure of the fellowship, 3) curriculum vitae, 4) writing sample, 5) evidence of English proficiency, and 6) three letters of reference to: ABF Postdoctoral Search, Department of Anthropology, The Field Museum, 1400 S. Lake Shore Drive, Chicago, IL, 60605.

\*\*\*\*\*

1400 S. Lake Shore Drive

Chicago, IL 60605-2496  
Telephone 312.922.9410

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# **UNIVERSITY OF GLASGOW,** **DEPARTMENT OF ARCHAEOLOGY,** **LECTURER IN ARCHAEOLOGY**

Level 7 (Spinal Point 32)

Applications are invited for the post of Lecturer (Grade 7 SP 32) in Archaeology to start on 1 September 2009. This appointment is a replacement for Professor Bernard Knapp who will be retiring from the Department.

Candidates for the post will have a commitment to high quality scholarship, research and pedagogy. They will have completed a PhD in Mediterranean Archaeology and have specific expertise in Mediterranean prehistory, preferably in the eastern basin. They will also hold extensive and relevant fieldwork experience and have relevant teaching experience in higher education. The successful candidate will have a demonstrable commitment to research excellence through an evolving record of international publication and conference participation.

The appointee will be expected to participate in the Department's teaching at undergraduate and postgraduate level. It is expected that you will offer two Honours courses (over two years) in Mediterranean Archaeology (indicative outlines for the existing courses can be viewed at:

<http://www.gla.ac.uk/departments/archaeology/currentstudents/honours/groupc/>).

You will also contribute to Postgraduate teaching, specifically to the MLitt in Mediterranean Archaeology, and be able to offer specialist modules which contribute to both Mediterranean Archaeology and at least one other of the current MLitt programmes. You will also be expected to undertake administrative duties associated with the delivery of your teaching as directed by the Head of Department.

## **ABOUT THE ARCHAEOLOGY DEPARTMENT**

The Department of Archaeology at Glasgow University grew out of the Geography department and has had an independent existence since the early 1960s. The first holder of the Chair of Archaeology, Leslie Alcock, was appointed in 1974 and he was succeeded by Christopher Morris (1990-2006). The Chair is currently vacant.

Since 1990 the Department has expanded and there are currently eleven full-time and two part-time lecturing staff, and a number of research staff. Many of the research staff are based in our 'in-house' contract research unit, Glasgow University Archaeological Research Division (GUARD), which employs around 28 archaeologists. GUARD undertakes a variety of field projects for government agencies and a wide range of commercial developers. Non-GUARD research staff include three Leverhulme Research Fellows and others linked to particular projects.

A number of colleagues in cognate areas of the University and the wider archaeological community contribute to both teaching and research. We have a buoyant student community, with typically around thirty postgraduate research students, a growing

number of well over two dozen taught postgraduate students, and in the region of 350 undergraduates at various stages of their careers.

In the most recent UK Research Assessment Exercise 50% of the Department's research output was deemed to be of international excellence with a proportion being of world-leading quality, including in particular that of the Mediterranean group. The Teaching Quality Assessment in January 2009, which was undertaken as part of the University's Institutional Review, commended the Department for the overall quality of its provision and for its commitment to and support of its students, and found our provision to be of a very high standard.

We are a cohesive Department with a congenial atmosphere. The Department is housed on 3 floors of the Gregory Building. There are good study and laboratory facilities and the Department is well supported by a number of technical, administrative and secretarial staff. We host the Leslie and Elizabeth Alcock Centre for Historical Archaeology, the Centre for Aerial Archaeology, and (through GUARD), the Centre for Battlefield Archaeology.

Bernard Knapp

Email: [b.knapp@archaeology.arts.gla.ac.uk](mailto:b.knapp@archaeology.arts.gla.ac.uk)

[Glasgow listing and a link for application at: [http://www22.i-grasp.com/fe/tpl\\_glasgow01.asp?s=bkMjPUrEcTFkHhTcz&jobid=26555,6554569934&key=1263265&c=146265351465&pagestamp=sehflhuxpspgudqpnt](http://www22.i-grasp.com/fe/tpl_glasgow01.asp?s=bkMjPUrEcTFkHhTcz&jobid=26555,6554569934&key=1263265&c=146265351465&pagestamp=sehflhuxpspgudqpnt)]

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## **ΑΝΑΚΟΙΝΩΣΕΙΣ - ANNOUNCEMENTS**



δίκτυο διάχυσης τεχνολογίας

Μια πρωτοβουλία του Συνδέσμου Επιχειρήσεων και Βιομηχανιών (ΣΕΒ)  
του Συνδέσμου Βιομηχανιών Βορείου Ελλάδος (ΣΒΒΕ)  
και του Ινστιτούτου Τεχνολογίας & Έρευνας (ΙΤΕ)

### **PARTNER REQUEST**

BBS Ref : PS-CULTURES

Title : Cultures

#### **ABSTRACT:**

The objectives are to create a network among cultural operators working the cultural and linguistic diversity in Europe to promote the transnational circulation of cultural and artistic works and products and the mobility of artists and people working in the cultural sector.

#### **DESCRIPTION:**

General objective:

Contact between cultural operators in Europe to university level or institutions in several other areas (Central Europe, Mediterranean, Nordic countries), working in areas that have more than one language (this is official or not) or working cultural and linguistic diversity.

Specific objectives:

Reflect on the management of cultural and linguistic diversity in multilingual and multicultural spaces in order to promote intercultural dialogue and facilitate the integration and development of all languages and cultures, and also promote social cohesion of the various cultural groups and who share these spaces. Facilitate the exchange and mobility both products and artists of all disciplines and cultural professionals participating in the project. Creating a stable network of cultural operators participating in the project.

Descriptions of the actions:

Meetings of artists and cultural professionals to discuss the management of cultural and linguistic diversity; stays in institutions, cultural centers and universities to acquire new experiences, and artistic exchange.

Development stage : Proposal Under Development

Keywords : Audiovisual Equipment and Communication (001005001), Human Language Technologies (001004004), Information Filtering, Semantics, Statistics (001004005), Cultural Heritage (001004001), Education and Training (011002), Information and media, society (011003), Infrastructures for social sciences and humanities (011005)

Organisation type : University

Organisation size : >500

Other details : Culture and social concerns.

Target partner organisation type(s) : University, Research/Technology Centre, Other

Target partner expertise sought :

Cultural Institutions,

Universities or Cultural Centers working with culture and social concerns.

People working in the cultural sector.

Partner Request Entered by:

Organisation: SGITT-OTRI – Universidad de Alicante

City: Alicante

Organisation Country: Spain

Organisation Web: [www.ua.es/otri](http://www.ua.es/otri)

Deadline for responses: 15/6/2009

*More info:*

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**Sotiris Xydis**

Technology Transfer Consultant

**PRAXI / HELP-FORWARD Network**

STHEV, Karamanli Ave. & Viomichanias, 413 35 Larissa, Greece

Tel.: (+30) 2410 53 44 52

Fax: (+30) 2410 55 55 09

e-mail: [larisa@help-forward.gr](mailto:larisa@help-forward.gr)

[www.help-forward.gr](http://www.help-forward.gr)

\*\*\*\*\*



A partnership of the Hellenic Federation of Enterprises (SEV)  
the Federation of Industries of Northern Greece (FING)  
and the Foundation for Research & Technology - Hellas (FORTH)

Larissa Node:

In co-operation with the Association of Thessalian Enterprises and Industries

Member of the Enterprise Europe Network - Hellas  
National Contact Point for the 7th Framework Programme





Μια πρωτοβουλία του Συνδέσμου Επιχειρήσεων και Βιομηχανιών (ΣΕΒ)  
του Συνδέσμου Βιομηχανιών Βορείου Ελλάδος (ΣΒΒΕ)  
και του Ιδρύματος Τεχνολογίας & Έρευνας (ΙΤΕ)

## CIP-ICT PSP-2009-3 THEME 2.3: DIGITISING CONTENT FOR EUROPEANA

This company wants to present to the call the **WAVE project** (Wide Area Virtual Environment) which objective is the digitalisation of cultural heritage that, for their own intrinsic characteristics, are not suitable for being shown in a "classical way" inside a Museum or are located in a site that is not easily reachable or indeed difficult to reach. On the European territory there are different collections of cultural heritage that are not easily accessible or not accessible at all from the general public (e.g. the enormous cave churches representing the artistic heritage of Matera in Italy, UNESCO World Heritage Site).

The Pilot project involves digitalization activities and the implementation of a web based software platform that will interface with Europeana. A set of virtual tours will be implemented, each of them with a specific theme. Architectonic cultural heritage sites will be implemented using 3D virtualization techniques including the artistic objects. The use of 3D multimedia virtualization techniques will offer the opportunity to take advantage of the cultural heritage in its own context preserving the multi-sensorial suggestion characteristics. The virtual simulation techniques in real environment will enable to simulate the change of some environmental parameters (i.e. change of brightness according to the time of the day and the period of the year), offering to the platform visitors as much as possible the feeling of real experience. The integration with spatial data, will enable the geo-reference of the cultural heritage stored in the system.

**For this project they are looking for European partners with cultural heritage that are not easily accessible or not accessible at all that could be interested in participation to our project.**

If you are interested in, please, contact as soon as possible:

dr.ssa Chiara Cappiello  
Unioncamere Basilicata  
Consorzio Brid€conomies  
c/o Camera di commercio di Matera  
via Lucana, 82  
tel +39 0835 338443  
e-mail [chiara.cappiello@mt.camcom.it](mailto:chiara.cappiello@mt.camcom.it)

\*\*\*\*\*

**Sotiris Xydis**

Technology Transfer Consultant

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\*\*\*\*\*



A partnership of the Hellenic Federation of Enterprises (SEV)  
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Larissa Node:  
In co-operation with the Association of Thessalian Enterprises and Industries

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National Contact Point for the 7th Framework Programme

## **BULLETIN OF THE SOCIETY FOR ARABIAN STUDIES**

The Society for Arabian Studies announces that the 2009 edition of its annual Bulletin (Bulletin of the Society for Arabian Studies vol. 14) can now be downloaded for free from its website, along with previous editions of the publication going back to 2006. To download, please go to <http://www.societyforarabianstudies.org/bulletin.shtml>

The Society would also like to announce that Robert Carter is now stepping down as editor of the Bulletin, and the new editor is Elizabeth Macaulay Lewis. If you wish to contribute to the next edition to the Bulletin, or have any comments or queries, please contact Dr Macaulay Lewis on [lizzie.lewis@mac.com](mailto:lizzie.lewis@mac.com)

From Rob Carter  
[racbahr@hotmail.com](mailto:racbahr@hotmail.com)

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## AEGEAN MINOAN 3D GIS DATABASE

Hi All,

I send this to request anyone here visiting the Aegean / Crete this summer and able to obtain GPS fixes or accurate map descriptions for any of the Minoan sites listed below to please help me to improve the Google Earth 3D GIS database:

"The Archaeological Sites of the Aegean Minoans"

<http://bbs.keyhole.com/ubb/ubbthreads.php?ubb=showflat&Number=1054387#Post1054387>

The database has been recently updated to now include some 154 archaeological sites. It is intended to be a free, comprehensive, and definitive source for the geographical distribution of the Minoan archaeological sites in the Aegean Sea area.

While many sites already have precise positions there are several, especially the newer ones, that need to be more accurately set and confirmed on the ground. The peak sanctuaries and some of the caves have been especially difficult to pinpoint and verify. I would sincerely appreciate any help, additions, corrections, comments, or suggestions that anyone may have.

The database is available as a Google Earth KMZ file attachment in the above article but I would be happy to email the small database file (~59 KB) as an attachment to anyone on request at: [minoanatlantis@gmail.com](mailto:minoanatlantis@gmail.com).

Thanks much and have a great summer.

Sheppard Baird

Email: [minoanatlantis@gmail.com](mailto:minoanatlantis@gmail.com)

[www.minoanatlantis.com](http://www.minoanatlantis.com)

Crete:

Caves:

Agios Charalambos

Arkalochori

Ayios Phaneromeni

Chosto Nero

Eileithyia

Idaeon

Kamares

Kefala-Liliano

Patso

Psychro

Pyrgos Tylissos

Skoteino  
Trapeza

Geographical Features:

Lassithi Plateau  
Mesara Plain  
Mt Dikte  
Mt Ida  
Mt Pachnes  
Tallaia Mountains

Palaces:

Archanes  
Galatas  
Gournia  
Knossos  
Knossos - Little Palace  
Knossos - Royal Villa  
Kydonia (Chania)  
Mallia  
Phaistos  
Zakros

Peak Sanctuaries:

Atsipadhes Korakias  
Dhemati  
Iuktas  
Kardamoutsa  
Kophinas  
Maza  
Petsofas  
Spili Vorizi  
Traostalos  
Vrysinas

Settlements:

Achladia  
Adromili  
Aghios Stephanos  
Alagni  
Amnissos  
Anemospilia  
Apodoulou  
Armeni  
Avdou  
Ayia Photia

Ayia Triadha  
Ayios Georgios  
Chamaizi  
Choiromandres  
Chrysokamino  
Chrysolakos  
Fournou Koryphi  
Galeni  
Gazi  
Gonies Philioremos  
Gortys  
Gouves  
Heraklion  
Itanos  
Kalathiana  
Kalo Horio  
Karphi  
Kastelli  
Kavousi  
Klimataria  
Kommos  
Kritsa  
Kroussonas  
Larani  
Lastros  
Lebena  
Lithines  
Lyktos  
Makriyialos  
Matala  
Mochlos  
Monastiraki  
Neapoli  
Nerokourou  
Nipiditos  
Nirou Khani  
Palaikastro  
Papadiokambos  
Papoura  
Petras  
Phylaki  
Pinakiano  
Plati  
Poros Herakleiou  
Poros Katsamba  
Prassa  
Pressos  
Priniatikos Pyrgos  
Pseira  
Pyrgos

Simi  
Sitia  
Skhinia  
Sklavokambos  
Stylos  
Tripiti  
Troullos  
Tylosos  
Vasiliki  
Vathypetro  
Vitsila  
Voni  
Xeri Kara  
Xida  
Ziros  
Zominthos  
Zou

Tholos Tombs:

Apesokari  
Apodoulou  
Kamilari  
Koumasa  
Kradi  
Nea Roumata  
Nekropolis Minois  
Odigitria  
Papoura  
Phourni  
Platanos  
Stylos  
Yerokambos

Cyclades & Aegean Islands:

Akrotiri - Thera (Santorini)  
Asomatos Kremastis - Rhodes  
Ayia Irini - Keos (Kea)  
Emporio - Chios  
Ialysos - Rhodes  
Kastri - Kythera  
Kastri - Syros  
Kephala - Keos (Kea)  
Mikri Vigla - Naxos  
Mikro Vouni - Samothrace  
Paroikia - Paros  
Phylakopi - Milos  
Poliohni - Limnos  
Prodromos - Paros

Serayia - Kos  
Serraglio - Kos  
Skouries - Kythnos  
Thermi - Lesbos  
Trianda - Rhodes

Mainland Greece:

Kolonna  
Pylos

Western Anatolia:

Iasos  
Knidos  
Miletus  
Troy

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## *INTERNET SITES*

# **THE HISTORICAL METALLURGY SOCIETY WEBSITE**

The Historical Metallurgy Society website has been updated with four new issues of the newsletter (issues 68–71) as well as 16 back issues (40–55). It is intended to continue digitising back issues as time allows.

Please visit the site: <http://www.hist-met.org/newsletter.html>

Thanks

David Dungworth

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## **WEBPAGE DEDICATED TO** **'ARCHAEOLOGY AND THE CRISIS'**

Announcing the opening of a webpage dedicated to 'archaeology and the crisis':

[www.ace-archaeology.eu/archaeology-and-the-crisis.shtml](http://www.ace-archaeology.eu/archaeology-and-the-crisis.shtml)

This webpage aims to bring together, make available and monitor information on the **effects of the ongoing global economic crisis on archaeology**, on a country by country basis.

On this webpage you can send information (via an online formulary) and also browse the latest data and syntheses on the effects of the crisis, along four overlapping themes:

- (a) **Research funding and priorities**
- (b) **Professional employment and skills**
- (c) **Conservation and public outreach, and**
- (d) **Heritage management, policies and legislation**

Information in this webpage (which can be provided anonymously) is open to comments and additions, periodically updated and reviewed to highlight possible trends. This will serve us all to better grasp and compare the immediate and long term effects of the crisis on archaeology - and hopefully also to contribute to our bouncing back.

This webpage is an initiative of the EC-Culture programme funded **ACE** network – *Archaeology in Contemporary Europe: Professional Practices and Public Outreach*.

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Nathan Schlanger  
Recherche et développement international  
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7 rue de Madrid, 75008 PARIS  
[nathan.schlanger@inrap.fr](mailto:nathan.schlanger@inrap.fr)  
[www.inrap.fr](http://www.inrap.fr)

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## **MORE EGYPTOLOGICAL PDFS FROM THE OI (CHICAGO)**

The Oriental Institute of the University of Chicago announces the free Internet publication of eleven Egyptological titles, available exclusively online. These volumes comprise the fifth batch of the 125 volumes scanned to be released. The sixth batch, which contains twelve titles, is being processed. Internet publication of these volumes was made possible with the generous support of Misty and Lewis Gruber.

Thomas G. Urban

MISC. The Culture of Ancient Egypt. By John A. Wilson. Oriental Institute Essay. Phoenix Edition 1956. Kindly note that this title was first published under the title The Burden of Egypt: An Interpretation of Ancient Egyptian Culture (1951).

<http://oi.uchicago.edu/research/pubs/catalog/misc/culture.html>

MISC. Kingship and the Gods: A Study of Ancient Near Eastern Religion as the Integration of Society and Nature. By Henri Frankfort, with a new Preface by Samuel Noah Kramer. Oriental Institute Essay. 1948

<http://oi.uchicago.edu/research/pubs/catalog/misc/kingship.html>

MISC. Most Ancient Egypt. By William C. Hayes, edited by Keith C. Seele. 1965

[http://oi.uchicago.edu/research/pubs/catalog/misc/most\\_ancient.html](http://oi.uchicago.edu/research/pubs/catalog/misc/most_ancient.html)

MISC. Ancient Egyptian Paintings Selected, Copied, and Described, Volume III: Descriptive Text. By Nina M. Davies with the editorial assistance of Alan H. Gardiner. 1936

<http://oi.uchicago.edu/research/pubs/catalog/misc/paintings3.html>

MISC. Quseir Al-Qadim 1978: Preliminary Report. By D. S. Whitcomb and J. H. Johnson. 1979

<http://oi.uchicago.edu/research/pubs/catalog/misc/quseir.html>

MISC. When Egypt Ruled the East. By George Steindorff and Keith C. Seele, revised by Keith C. Seele. 1957

[http://oi.uchicago.edu/research/pubs/catalog/misc/when\\_egypt.html](http://oi.uchicago.edu/research/pubs/catalog/misc/when_egypt.html)

MISC. Ancient Textiles from Nubia: Meroitic, X-Group, and Christian Fabrics from Ballana and Qustul. By Christa C. Mayer Thurman and Bruce Williams. 1979

<http://oi.uchicago.edu/research/pubs/catalog/misc/textiles.html>

OIP 3. The Edwin Smith Surgical Papyrus, Volume 1: Hieroglyphic Transliteration, Translation, and Commentary. By J. H. Breasted.  
Oriental Institute Publications 3. 1930

<http://oi.uchicago.edu/research/pubs/catalog/oip/oip3.html>

OIP 4. The Edwin Smith Surgical Papyrus, Volume 2: Facsimile Plates and Line for Line Hieroglyphic Transliteration. By J. H. Breasted.  
Oriental Institute Publications 4. 1930

<http://oi.uchicago.edu/research/pubs/catalog/oip/oip4.html>

OIP 17. Paleolithic Man and the Nile-Faiyum Divide in Nubia and Upper Egypt: A Study of the Region during Pliocene and Pleistocene Times. By K. S. Sandford and W. J. Arkell. Oriental Institute Publications 17, Prehistoric Survey of Egypt and Western Asia II. 1933

<http://oi.uchicago.edu/research/pubs/catalog/oip/oip17.html>

OIP 34. The Egyptian Coffin Texts 1: Texts of Spells 1-75. By Adriaan de Buck.  
Oriental Institute Publications 34. 1935

<http://oi.uchicago.edu/research/pubs/catalog/oip/oip34.html>

From Thomas Urban  
Email: [turban@uchicago.edu](mailto:turban@uchicago.edu)

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***ΝΕΕΣ ΕΚΔΟΣΕΙΣ – NEW PUBLICATIONS***

**IRON AND STEEL: CORROSION,  
COLOURANTS, CONSERVATION, BY  
DAVID A. SCOTT**

Dear colleagues,

As a sequel to "Copper and Bronze in Art" (2002), we announce the publication by Archetype Press, London, of 'Iron and Steel: Corrosion, Colourants, Conservation' by David A. Scott and Gerhard Eggert due at the end of June 2009. Please note that a discounted price is in effect until 30th June 2009. (regular introductory price GBP55.00)

Offer applies to orders made to Archetype London office by credit card.

Archetype details can be found easily on the web....all the best...David.

Please visit the site: <http://www.archetype.co.uk/searchforth.asp>

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# ΛΕΞΙΚΟ ΣΤΑΤΙΣΤΙΚΗΣ ΟΡΟΛΟΓΙΑΣ ΕΛΛΗΝΟ - ΑΓΓΛΙΚΟ και ΑΓΓΛΟ – ΕΛΛΗΝΙΚΟ ΛΕΞΙΚΟ

**ΝΕΑ ΚΥΚΛΟΦΟΡΙΑ – Έκδοση του ΕΛΛΗΝΙΚΟΥ ΣΤΑΤΙΣΤΙΚΟΥ  
ΙΝΣΤΙΤΟΥΤΟΥ (Ε.Σ.Ι.)**

**Κατάλληλο για Προπτυχιακό και Μεταπτυχιακό Επίπεδο**



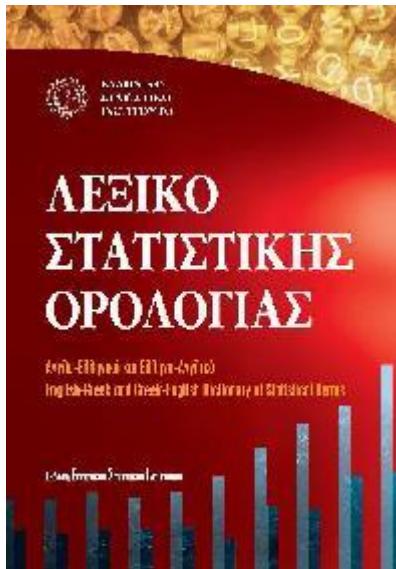
Πατησίων 53, Αθήνα, τκ:10433, Τ. 210 5245264 - 210 5232709, F:  
210 5245246, W: [www.propobos.gr](http://www.propobos.gr) E: [propobos@propobos.gr](mailto:propobos@propobos.gr)

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**Έκδοση του ΕΛΛΗΝΙΚΟΥ ΣΤΑΤΙΣΤΙΚΟΥ  
ΙΝΣΤΙΤΟΥΤΟΥ (Ε.Σ.Ι.)**

*Επιστημονική Επιτροπή Στατιστικής Ορολογίας για  
το Λεξικό:*

*Θ Κάκουλλος - Θ Μοσχονά - Χ Μουσιάδης - Τ  
Παπαϊωάννου – Τ Χριστοφίδης*



**ΛΕΞΙΚΟ ΣΤΑΤΙΣΤΙΚΗΣ ΟΡΟΛΟΓΙΑΣ**  
ΕΛΛΗΝΟ - ΑΓΓΛΙΚΟ και ΑΓΓΛΟ – ΕΛΛΗΝΙΚΟ  
ΛΕΞΙΚΟ

ISBN: 978-960-88865-3-7, Σελίδες: 280,  
Σχήμα: 17x24. **Λιανική Τιμή Εμπορίου: € 15,00**

"Το Λεξικό Στατιστικής Ορολογίας αποτελεί ένα σύγχρονο και πλήρως ενημερωμένο Άγγλο-ελληνικό και Ελληνο-αγγλικό Λεξικό Στατιστικής Ορολογίας το οποίο αποδίδει, χωρίς να ερμηνεύει, έγκυρα στα ελληνικά ή τα αγγλικά τους Στατιστικούς Όρους, παλαιούς και νέους και ιδίως τους νέους οι οποίοι τα τελευταία χρόνια έχουν αλματωδώς προστεθεί στον κλάδο των Στατιστικών Επιστημών."

***Οι Εκδόσεις ΠΡΟΠΟΜΠΟΣ προωθούν το συγκεκριμένο βιβλίο στην εκπαιδευτική κοινότητα, (φιλικά) επειδή πιστεύουν στην αναγκαιότητά του, αλλά δεν το πρακτορεύουν και δεν έχουν καμία οικονομική σχέση.***

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**Το χρονικό της έκδοσής του (Στατιστικό περισκόπιο, Νέα του ΕΣΙ, ν.33/Μαρ-Απρ 2009)**

Όπως είναι γνωστό το Ε.Σ.Ι εξέδωσε το πολύ αναμενόμενο Λεξικό της Στατιστικής Ορολογίας.

Η ιδέα είχε ξεκινήσει αρκετά χρόνια πριν, όταν στα Πανελλήνια Συνέδρια του Ε.Σ.Ι. και κατά τις Συνεδρίες λήξης των Συνεδρίων ετίθετο θέμα ορθής, ομοιόμορφης και κατανοητής απόδοσης των αγγλικών κυρίως όρων στα ελληνικά και είχε παρουσιαστεί η αναγκαιότητα ρύθμισης της κατάστασης στην Ελληνική Στατιστική Ορολογία.

Είχαν μάλιστα οριστεί και κάποια μέλη του Ε.Σ.Ι. να ασχοληθούν με το θέμα.

Χαρακτηριστικά παραδείγματα είναι οι όροι εξάρτηση για regression, κοινή κατανομή για joint distribution κλπ. Το θέμα ξανασυζητήθηκε κατά τη λήξη του Συνεδρίου της Ρόδου το 2005 όπου και ορίστηκε η τωρινή Επιτροπή Στατιστικής Ορολογίας αποτελούμενη από τους Καθηγητές Θ. Κάκουλλο, Θ. Μοσχονά, Χ. Μωυσιάδη, Τ. Παπαϊωάννου, και Τ. Χριστοφίδη.

Το έργο της κατάρτισης του Αγγλοελληνικού Λεξικού ξεκίνησε αμέσως.

Η Επιτροπή στηρίχθηκε κυρίως στα λήμματα - όρους του International Statistical Institute και του Oxford Dictionary of Statistical Terms και αφού επιμερίσθηκε το έργο της απόδοσης στα ελληνικά των αγγλικών όρων, ξεκίνησε έντονα την δουλειά της. Ακολούθησαν αλληλοδιορθώσεις μεταξύ των μελών της Επιτροπής, αναζήτηση βιβλιογραφίας, άλλα λεξικά, εγκυκλοπαίδειες κλπ. Καθοριστικής σημασίας για την προώθηση του Λεξικού ήταν η για τρεις μέρες συνεδρία της επιτροπής στη Λευκωσία, τον Νοέμβριο του 2006, ύστερα από ευγενή πρόσκληση του Καθηγητή Τ. Χριστοφίδη και φιλοξενία από το Πανεπιστήμιο Κύπρου. Για δυο μέρες πρωί και απόγευμα συνεδριάζαμε, συζητούσαμε τις διάφορες αποδόσεις των όρων, καταλήγαμε στις προτιμητέες αποδόσεις και σε άλλες λεπτομέρειες της παρουσίασης του Λεξικού. Ακολούθησαν πολλές ανταλλαγές μεταξύ των μελών, διορθώσεις, προσθήκες όρων, αναζήτηση σε άλλα λεξικά, κατάρτιση της βιβλιογραφίας, επικοινωνία και διευκρινίσεις με φιλόλογους και γλωσσολόγους κτλ. Έτσι το αγγλοελληνικό λεξικό έφτασε σε σχεδόν τελική μορφή.

Το καλοκαίρι του 2007 η Επιτροπή κατέληξε σε θέματα που αφορούσαν το εξώφυλλο, τον πρόλογο και την εισαγωγή η οποία θα αναφέρονταν σε θέματα λεξικογραφίας και την οποία προσφέρθηκε να γράψει ο Καθ. Θ. Κάκουλλος. Στη συνέχεια προωθήσαμε το ελληνο-αγγλικό λεξικό με ηλεκτρονική αντιστροφή των όρων, έργο το οποίο αποδείχθηκε περισσότερο χρονοβόρο απ' ό,τι αρχικά φαινόταν (οι αντίστοιχες έξι συναρτήσεις δεν ήταν αντιστρέψιμες!). Τότε προέκυψαν πολλά θέματα ομοιομορφίας και συνέπειας στην απόδοση των όρων. Χρειάστηκε ένας περίπου χρόνος για να ολοκληρωθεί το έργο αυτό.

Έτσι, το φθινόπωρο του 2008 ολοκληρώθηκε ολόκληρο το έργο του Λεξικού και ακολούθησε η επιλογή του εκδότη, σχεδιασμός εξωφύλλου κτλ. Το Λεξικό περιλαμβάνει και αρκετούς νέους όρους και νεολογισμούς (βλ. Εισαγωγή) και όρους με επιτυχία, κατά τη γνώμη μας, απόδοση ύστερα από βασανιστική διερεύνηση. Για αρκετούς όρους προκρίθηκε η πολλαπλή απόδοση, ανάλογα με το πεδίο εφαρμογής ή τη χρήση που σε κάποιο βαθμό έχει επικρατήσει στην ελληνική στατιστική ορολογία, όπως, π.χ. το process αποδόθηκε ως ανέλιξη αλλά και ως διαδικασία.

Όπως αναφέρεται και στον πρόλογο του Λεξικού, το Λεξικό είναι δυναμικό με την έννοια ότι η επιστήμη, η ορολογία εξελίσσεται, εμπλουτίζεται και, επιπλέον, ακόμη παραμένουν όροι οι οποίοι επιδέχονται βελτίωση ή έχουν και πολλαπλές αποδόσεις.

Μερικοί όροι των οποίων η απόδοση στα ελληνικά μας κούρασε ιδιαίτερα είναι οι εξής:

alias, attributable, counting, digression, drift, dominate, majorize, forecast, prediction, hazard, risk, nesting, censoring, trimming, truncation, rank, score, fiducial, signomial. Για την απόδοσή τους, όπως κατέληξε η Επιτροπή, σας παραπέμπουμε στο Λεξικό.

Θερμές τέλος ευχαριστίες οφείλονται προς τα μέλη της Επιτροπής Στατιστικής Ορολογίας για την πλέον των τριών ετών, συστηματική, επίμονη και επίπονη

λεξικογραφική τους δουλειά που οδήγησε στο Λεξικό το οποίο κυκλοφορεί από το Φεβρουάριο του 2009.

Ευχαριστούμε επίσης πολλούς άλλους συναδέλφους, στατιστικούς, μαθηματικούς, βιολόγους, οικονομολόγους, αλλά και φιλόλογους, γλωσσολόγους, αναλογιστές κλπ. Που συμβουλευτήκαμε και μας βοήθησαν κατά την τριετή αυτή προσπάθεια.

Με εκτίμηση

Θ. Κάκουλλος -Τ. Παπαιωάννου

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## **ARCHAEOLOGY 51/3**

Published on behalf of the University of Oxford Edited by:  
Mark Pollard, Ernst Pernicka, James Burton and Marco Martini

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Factor: 1.290

Archaeometry is an international research journal covering the application of the physical and biological sciences to archaeology and the history of art. The topics covered include dating methods, artifact studies, mathematical methods, remote sensing techniques, conservation science, environmental reconstruction, biological anthropology and archaeological theory.

The journal is published on behalf of the Research Laboratory for Archaeology and the History of Art, Oxford University, in association with Gesellschaft für Naturwissenschaftliche Archäologie, ARCHAEOLOGIE, the Society for Archaeological Sciences (SAS), and Associazione Italian di Archeometria.

### **TopNews and Announcements**

New Virtual Issue from Archaeometry!

Read the new virtual issue on Diagenetic and Isotopic Studies of Bones and Teeth, compiled by the editor Mark Pollard. Read his editorial [here](#).

Radiocarbon Dates from the Oxford AMS System Unique to Archaeometry, this resource is the thirty-third list of AMS radiocarbon dates measured at the Oxford Radiocarbon Accelerator Unit (ORAU) includes the latest series of determinations from the key sites of Çatalhöyük, Abu Hureyra and Khirbet Qeiyafa, as well as others dating to the Palaeolithic, Mesolithic and later periods. In addition, new dates are reported that replace previous determinations affected by the ultrafilter problems that occurred previously in the ORAU.

Rethinking Silk's Origins - Archaeometry featured in Nature The article New Evidence for Early Silk in the Indus Civilization by L. Good, J.M. Kenoyer and R.H. Meadow has been featured in the article 'Rethinking Silk's Origins' in Nature by Philip Ball.

### **Lascaux caves study in Archaeometry**

The painted caves of Lascaux in the Dordogne region of France are one of the most famed monuments of Ice Age art.

undefined

Writing in the journal Archaeometry, Celine Chadeaux and her colleagues investigate the compositions of bone, ivory and antler in paint used on the Lascaux cave walls.

From <http://www.wiley.com/bw/journal.asp?ref=0003-813x> [Go there for links to abstracts and to purchasable articles. Go there for links to 50th anniversary commemorative virtual issue of Archaeometry as created by the Editor, Mark Pollard.

This virtual issue pulls together a collection of influential papers published in the journal over the past 50 years.

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## **LEIDEN JOURNAL OF POTTERY** **STUDIES 24, 2008**

We announce the new issue of the Leiden Journal of Pottery studies. This issue contains several studies of ancient Near Eastern ceramics.

Leiden Journal of Pottery Studies 24, 2008

### **Table of contents:**

- Indigenous pottery after the Spanish conquest of Mexico: potters' reactions to the new colonial society (G. Hernández Sánchez)
- Early Ostionan Ostionoid ceramic component of the El Cabo site, Dominican Republic: a morphological, technological and stylistic ceramic examination based on an attribute analysis (C.J. St.Jean)
- In search of potential clay sources used for the manufacture of the Pre-Columbian pottery of El Cabo, Eastern Dominican Republic (A. van As, L. Jacobs and C.L. Hofman)
- Different communities or changing pottery techniques? The transition from the Late Chalcolithic to the Early Bronze Age discovered at Qatar Damiyah (Jordan Valley) (E. Kaptijn and M. de Vreeze)
- Deir 'Alla phase VII: the naissance of a distinct Central Transjordanian ceramic tradition (N.C.F. Groot and J. Dik)
- Comparison of compositional analyses of Iron Age ceramics from two sites in Jordan (G.A. London, R.D. Shuster, J. Blair and S. Kelly)
- The Iron Age pottery of al-Lehun, Jordan: fabrics and technology (M.L. Steiner and L. Jacobs)
- Cypriot pottery at the University of Melbourne: an examination of historical context and conservation issues (P. Nel and A.S. Jamieson)
- A new life for old pots. Early pottery repairs from 7th millennium Tell Sabi Abyad (northern Syria) (O.P. Nieuwenhuys and R. Dooijes)
- An ethnographic study of three Betammaribé pottery workshops in northwestern Benin (L.P. Petit)
- A new ethnoarchaeological documentation project at the Fustat pottery workshops, Egypt (K. Duistermaat and N.C.F. Groot)
- Current research of the Leiden Department of Pottery Technology (2008)

See for details concerning order this and previous issues:

<http://www.archaeology.leiden.edu/organisation/publications/journal-of-pottery-studies/>

From A. van As email:

[A.van.As@arch.leidenuniv.nl](mailto:A.van.As@arch.leidenuniv.nl)

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## **ON NOAH'S FLOOD**

I would like to make you aware of my new book Noah's Flood: Birth of the Ice Age. The book opens up a whole new understanding of the events surrounding the creation of the world and Noah's Flood. At the same time, it remains true to the words of Moses. The book provides science-based answers to difficult questions.

My credentials (and the book's introductory chapters) can be viewed on my website: [www.noahs-flood.com](http://www.noahs-flood.com) [Go there for links to ToC, downloadable chapters, ordering, etc.]

Robert Gielow

Email: [rgielow@ameritech.net](mailto:rgielow@ameritech.net)

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# **ARCHAEOLOGY, VOLUME 62 NUMBER** **4, JULY/AUGUST 2009**

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ARCHAEOLOGY navigates the latest underwater discoveries

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Why trash from a hippie commune is worth preserving by Matthew Brunwasser

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The Peruvian mountain guide who first spotted the "Ice Maiden" talks about archaeology in the Andes and appeasing the Inca earth goddess

**Insider**

Did an ugly, waxy tuber feed the Maya civilization?

**Letter from Belgium**

Draining and exploring the underground shelters of the Great War by Andrew Curry

**Artifact**

How did ancient marble reliefs stay on the walls? An answer comes courtesy of a depiction of Dionysus from Herculaneum.

May/June 2009 | July/August 2009 is the most recent issue of ARCHAEOLOGY.

Please visit the site: <http://www.archaeology.org/0907/> [Go there for Full Text of the first 2 articles]

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# **MEDITERRANEAN ARCHAEOLOGY** **AND ARCHAEOLOGY** **INTERNATIONAL SCIENTIFIC** **JOURNAL VOLUME 9 ISSUE 1(2009)**

## **Table of Contents:**

**Optically Stimulated Luminescence properties of natural Schist E.C. Stefanaki, D. Afouxenidis, G.S. Polymeris , A. Sakalis, N.C. Tsirliganis, G. Kitis**  
**Abstract | Full Text: PDF (Size 5,16MB)**

Schist is a common siliciclastic geological material that has been extensively used in buildings as brick, tile and roofing slates. Its use, especially in the Mediterranean sea is widespread through the centuries. There are various examples from the ancient Greece, such as monuments from Knossos, Karthaia, as well as from modern Greece, such as traditional houses, etc. Schist is a metamorphic crystalline rock composed largely of silicon minerals, such as quartz, muscovite mica and feldspars. The type and composition of schists, as well as, the concentration of each mineral depends strongly on the type and the origin of the schist. Its past and modern use makes it a suitable candidate for archaeological dating, as well as, for retrospective dosimetry purposes.

In the present work a preliminary characterization of schist is performed in order to investigate if some basic properties required for dating applications can be found in this material. The preliminary study concerns the optical stability, the sensitization and linearity of the Infrared Stimulated Luminescence (IRSL) resulting from feldspars, as well as the post IR Blue Optically Stimulated Luminescence (post - IR Blue OSL) resulting mostly from quartz. The results indicate that both signals are rapidly bleached when the sample is exposed to sunlight. The dose response was found to be linear for radiation doses at least up to 75 Gy for the IRSL signal and at least up to 25 Gy in the case of post - IR Blue OSL. The use of a single aliquot measurement protocol, due to the lack of sensitisation, extends the latter dose response linearity region up to 75 Gy for the post - IR Blue OSL signal of schist. Finally, the application of the double single-aliquot regenerative-dose protocol to schist was investigated, in order to recover, successfully, the equivalent dose in 4 - 11  $\mu\text{m}$  grains of the compound.

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**Geomorphological and geological constraints on the development of Early Bronze chert industries at the northern rim of the Al Jafr Basin, Southern Jordan Nizar Abu-Jaber, Ziad al Saad, Mohammad al Qudah Abstract | Full Text: PDF (Size 4,26MB)**

The northern rim of Al Jafr basin was the focus of a massive quarrying effort during the late Neolithic and Chalcolithic periods. At that time, massive volumes of chert were extracted from the Muwaqqar Chalk Marl and the Umm Rijam Formations that crop out in the Umm Rijam, Khuzayma and Al Athriyat mountains.



The landscape of the region is marked by a 100 km long escarpment marking the hydrological divide between the Al Jafr and Al Hisa basins. This escarpment and associated buttes were the exposures from which the chert was extracted. This was done from the nodules of the Muwaqqar Chalk Marl Unit beds and from the beds of the Umm Rijam Formation. Various patterns of extraction were developed based on the nature of the geological formation. The soft marl and chalk of the MCM led to narrow and deep digging into the exposures. The hard limestone of the Umm Rijam formation led to wide and shallow extraction patterns.

Hilltops on the plateau served as sites for stone workshops. These sites were readily accessible and apparently defensible. They probably served dual purposes; a place to work stone and as observation posts defending the stone extraction activities in the lower areas.

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**Is white pigment on Appelles' Palette a TiO<sub>2</sub> - Rich Kaolin? New Analytical results on the case of Melian - Earth Th. Katsaros, I Liritzis, N. Laskaris Abstract | Full Text: PDF (Size 5,64MB)**

According to Theophrastus of Eressos (4th c. B.C.) Melian-earth was a very bright white color used by the painters of his era. Pliny the Elder described it as the white pigment of the famous painter Appelles (c. 352 - 308 BC). Earlier investigations on the island of Melos (Aegean Sea) have not identified the specific place of the extraction of this material, because of the unknown chemical character. In our new analytical data from excavations (Turkey, Italy, England) the presence of a TiO<sub>2</sub> phase in the white ground decoration of ceramics has been testified, especially after the meticulous exploration of the island of Melos with a new point of view. At the western side of the island Kaolin was found in the locality of Kontaros with 1% by weight TiO<sub>2</sub>. Analytical results from the white layer of decoration of the white ground Lekythoi give us the same level of TiO<sub>2</sub>. We propose that the famous white pigment well known as melian earth in antiquity could be a kind of natural Titania as impurity in the Kaolin.

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**Solarization behaviour of manganese-containing glass: An experimental and analytical study Ramadan Abd-Allah Abstract | Full Text: PDF (Size 5,16MB)**

This paper is an initiative study of the solarization phenomenon of archaeological glass that until now has been recorded, but not extensively studied. It also aims to reveal the fact concerning this phenomenon as a photochemical process that affects the spectral and optical properties of ancient glass. Many solarized or purpled glasses found at Barsinia archaeological site in Jordan were collected and analyzed using atomic absorption spectroscopy (AAS) technique to identify the elemental composition of these glasses. Furthermore, many pieces of decolorized or colourless glasses containing reduced manganese were exposed to a concentrated ultraviolet (UV) radiation in accelerated weathering chamber for long times. A preliminary examination by light transmission microscopy and using double beam spectral photometers allowed determination of the changes in optical properties (transmittance and colour) of selected glasses. However, it is the goal of this paper to show that solarization becomes more than an aesthetic problem when it occurs on glass components of an optical system. Solarization may also permanently degrade a material's physical or mechanical properties.

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### **The orientation of Delos' Monuments**

**G. Pantazis, E. Lambrou, K. Nikolitsas, M. Papathanassiou, A. Iliodromitis**  
**Abstract | Full Text: PDF (Size 5,16MB)**

Apollo's sacred island, Delos, is an extended archaeological site which contains important monuments dating from prehistoric to Hellenistic times. In this article the orientation of some of the most significant monuments of the site are studied.

Each monument has been measured by means of modern accurate geodetic and astrogeodetic methods and instrumentation so that its plan, its main (longitudinal) axis, the profile of the perceptible horizon as seen from the monument and the astronomical azimuth of the main axis are determined.

Special attention and study have been reserved to the Cave of Kynthos (Andron), as the latter was considered as an ancient observatory.

This study attempts also a possible dating of the measured monuments based on their orientation and its relation to special celestial bodies.

All data deduced by measurements and calculations, as well as historical information have been used for the creation of a data base in Macromedia software.

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### **Evaluation of cellulose acetate and chitosan used for the treatment of historical papers Goma Abdel-Maskoud, Ziad Al-Saad Abstract | Full Text: PDF (Size 4,18MB)**

A lot of papers in museums and libraries suffer from unsuitable environmental conditions that can lead to brittleness and fragility.

This study aims to evaluate the efficiency of cellulose acetate and chitosan at different concentrations for the preservation of historical papers. The untreated and treated samples were submitted to different accelerated ageing cycles. Analytical techniques used for the evaluation process were tensile strength and elongation measurement, UV-spectrophotometer, XRD, and SEM. The results revealed that heat-moist-light ageing cycle affected the properties studies more than other ageing cycles. The lower concentrations gave an improvement better than the higher concentrations of cellulose acetate and chitosan.

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### **The emergence and development of a round building tradition in the aegean and crete Evyenia Yiannouli Abstract | Full Text: PDF (Size 5,64MB)**

This paper examines the emergence of the non-submerged type of round building in the settlements of prehistoric Aegean, including Crete. It complements our earlier discussion of the Minoan evidence that concentrated on the properties of architectural form and the cultural semantics of its perishable structure. This work explores the common characteristics that this particular architectural genre acquires in the prehistoric communities of the Greek mainland, the Aegean islands and Crete, along with the features that seem to demarcate distinct chronological and geographical groupings. More specifically, the systematic co-occurrence of features warrant, in our view, the identification of a hitherto unidentified round building type, detected in the iconography

of Minoan Crete. It is the Minoan evidence par excellence that presents the greatest diversity of architectural variants, contexts and apparently function. On a more general level, the tradition of a round building type is inferred on the basis of the persistent adoption of a particular architectural form, along with the local adaptation of certain peculiarities that impinge on its cultural semantics. Our treatment of the material defines a conspectus of topics for further research, posing a frame for the historical understanding of a general building shape that in the Aegean may often, but not always, preserve the form and contents of a typical settlement house.

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**Deterioration of the floor of interior courtyard of sultan Hassan Mosque in Cairo, Egypt Tarek Nazel Abstract | Full Text: PDF (Size 5,64MB)**

The college- mosque of Sultan Hassan is considered one of the finest examples of Islamic architecture not only in Egypt but also in the East. Its open interior courtyard is paved with three different types of marble slabs. These marble slabs suffer from severe deterioration.

Causes of this deterioration were determined accurately through the ocular examination of the courtyard and confirmed by the laboratory tests which were carried out on samples representing the three common types of marble used in the floor namely the white, the red and the black marble. Sun light and heat are the main deterioration factors and the consequent thermal expansion is the main property which led to the detected deterioration phenomena. Types and mechanisms of deterioration affected the floor were described and explained.

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**Building and applying 'Insularity Theory': Review of Knapp's Prehistoric and Protohistoric Cyprus, 2008 Stella Katsarou - Tzeveleki Abstract | Full Text: PDF (Size 5,64MB)**

Please visit the site: [http://www.rhodes.aegean.gr/maa\\_journal/issues2009a.html](http://www.rhodes.aegean.gr/maa_journal/issues2009a.html)  
[Go there for links. NB. The review of Knapp's Prehistoric and Protohistoric Cyprus (2008) is complete and downloadable from there]

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## **EΙΔΗΣΕΙΣ - NEWS RELEASE**

# **GUTENBERG BIBLE EXTRACT FOUND, FROM CORRESPONDENTS IN COLMAR, FRANCE**

AN extract from the Gutenberg Bible, believed to be the first book ever printed, has been found in a library in the eastern French city of Colmar.

A library assistant, who made the chance discovery as she was searching the collection for something else, said finding this "human treasure" gave her the "fright of her life".

A 16th-century bookbinder had used the vellum paper extract as part of the binding for another book.

Experts confirmed the discovery by comparing the extract with a photocopy of the Gutenberg Bible, which was written with the same gothic font and printed by Johannes Gutenberg in Germany in the 15th century.

Only 50 of the Gutenberg Bibles exist, of which 12 were printed on vellum paper.

Colmar library, which has a rich supply of books taken from the region's churches and abbeys, is home to thousands of manuscripts and 2200 early printed books.

Please visit the site: <http://www.news.com.au/heraldsun/story/0,21985,25555093-5012749,00.html>

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## **BILLION-PIXEL PICTURES ALLOW ULTRA-ZOOMING FOR SCIENCE BRIAN HANDWERK FOR NATIONAL GEOGRAPHIC NEWS**

If a picture is worth a thousand words, what's a thousand-megapixel picture worth?

Such "gigapixel" pictures allow viewers to zoom in from say, a panoramic view of President Obama's inauguration to the solemn expression on his face—as in one of the new technology's most famous applications.

For scientists—many of whom gathered in Pittsburgh last week for training in new gigapixel technology—these ultra-zoomable images are becoming tools to improve the study of archaeology, geology, biology, and more.

### **GigaPan Tech: How It Works**

Developed by GigaPan systems, a for-profit company, the new GigaPan system allows users to create these superhigh-resolution panoramas with ordinary digital cameras.

With camera attached, a robotic GigaPan tripod systematically photographs a scene with thousands of close-up images, which are later stitched together with proprietary software.

A non-profit lab, the Global Connection Project (started by Carnegie Mellon, NASA, Google, and the National Geographic Society) coordinates GigaPan outreach, education, and science work. (The National Geographic Society owns National Geographic News.)

The technology was first developed for the NASA rovers on Mars, but all along, scientists at Pittsburgh's Carnegie Mellon University had hoped to put GigaPan into as many hands as possible. Some current systems sell for under U.S. \$400.

Conferences like last week's are designed to help "take the best scientists and have them essentially chart a course for this new tool," said organizer Illah Nourbakhsh, a Carnegie Mellon robotics professor. Already, attendees of previous seminars are putting the technology to work.

Ian Straughn, a postdoctoral archaeology fellow at Brown University, is using GigaPan to explore one of the world's great wonders—Jordan's ancient, ruined city of Petra—where the images allow him visualize the site's larger landscape. (See zoomable Petra GigaPan picture at top.)

The capital of the first century A.D. kingdom of Nabataea, Petra is famous for its many stone structures such as a monumental temple carved with classical facades into rose-colored rock. (See pictures of the "new seven wonders of the world," including Petra.)

With GigaPan images, even remote researchers can "understand spatial relationships between the different components of a landscape in a way that a map can't offer," Straughn added.

"One of the things you can really pick out from these images is the relationship between the living city of Petra and the surrounding necropolis, the city of the dead—all [mixed] into a rich topography.

### **World's Best Magnifying Glass?**

Geologist Ron Schott, of Fort Hays State University in Kansas, has shot over 300 GigaPan pictures, from panoramic landscapes to close-ups depicting minute characteristics of rock.

"You can see things over a wide area at really good detail. You can actually ... make out small little minerals that you'd need a [magnifying glass] to see" in person, Schott said.

Schott also uses GigaPan to look at the big picture—such as of different layers of sedimentary rock. For example, by comparing the rock layers of opposite sides of a fault, he can determine where geological movement has occurred, and to what degree.

In the future, Schott anticipates high-resolution 3-D modeling that may spring from the technology.

"You could shoot a GigaPan of a glacier or a growing lava dome and come back a day later to see exactly how things have changed."

### **Desktop Conservation**

As a ranger at fossil-packed Durlston Country Park in the United Kingdom, Ali Tuckey aims to get the county-administered park's paleontological treasures in front of as many eyes as possible.

The problem is that the fossils are in seaside deposits too dangerous for tourists or schoolchildren.

GigaPan "is not quite being there, but it's coming close," Tuckey said.

Tuckey also hopes to use GigaPan to enlist virtual volunteers.

For example, he said, "to manage [our grassland habitat] successfully, we have to know the numbers and density of different wildflowers, and we have to keep monitoring, to see the impact we're having with grazing or cutting."

GigaPan images could help many hands make light work of these types of environmental-monitoring tasks, whether at threatened coral reefs, in vanishing rain forests, or on Durlston's grasslands.

"With a great shot of a meadow, people could actually zoom in and count the numbers and varieties of different wildflowers," Tuckey said.

"If we make these astonishing images available on the Web, people could potentially log on at home and do actual research. And it doesn't matter if they are in Birmingham or Singapore."

GigaPan panoramas courtesy Ian Straughn (Petra) and Ron Schott (rock layers).

Please visit the site: <http://news.nationalgeographic.com/news/2009/05/090527-gigapan-pictures.html> [Go there for amazing pix.]

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## **ITALIANS TO HELP IRANIANS RESTORE TOMB OF CYRUS THE GREAT**

Italian experts will help Iran restore the tomb of Cyrus the Great (580-529BC), considered one of the most magnificent monuments of antiquity, Culture Minister Sandro Bondi said on Wednesday.

An agreement signed in Tehran on Wednesday will see Italian archaeologists working with their Iranian colleagues for at least two years.

The tomb in the ancient city of Pasargadae, in southern Iran, is considered the symbol of the country's national identity and was already famous in ancient times.

Greek conquerer Alexander the Great (356-323 BC) is reported to have visited the tomb in sign of respect after the fall of the Persian empire.

Italy had already offered its help restore the monument, which Iranian authorities are concerned may be affected by flooding if the construction of a proposed dam near the UNESCO World Heritage site goes ahead.

Italian archaeologists have a history of working with Iran to safeguard important cultural heritage, including a project to restore part of the ancient city of Bam. Bam was devastated by an earthquake in December 2003 which claimed 40,000 lives.

While successfully conquering many neighbouring empires, Cyrus the Great was renowned for his magnanimous attitude and is thought to be responsible for the first known charter of human rights.

Written in cuneiform script on a baked clay cylinder, the charter recounts his treatment of the Babylonians following his defeat of their empire in 539 BC.

The expertise of Italian restorers is valued worldwide and archaeologists frequently collaborate with foreign colleagues to conserve monuments and art.

Bondi said restorers would use the latest state-of-the-art equipment developed by Italian restorers and technicians to save the monument.

Please visit the site: <http://www.italymag.co.uk/italy/arts-and-culture/italians-help-iranians-restore-tomb-cyrus-great>

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## **REMAINS OF TEMPLE OF ISIS FOUND,** **WORKMEN FIND FRAGMENTS** **DIGGING INSIDE FLORENCE** **COURTHOUSE**

(ANSA) - Florence, May 28 - Workmen inside Florence's courthouse have stumbled across a spiral column and hundreds of multicoloured fragments that experts believe may have belonged to a Roman temple dedicated to the Egyptian goddess Isis.

Dating to the second century AD, the remains were discovered as the men dug a five by three metre hole, barely four metres deep, for a new water cistern for the courthouse's anti-incendiary system.

"These finds are of extraordinary importance," said Alessandro Palchetti, the archaeologist charged with overseeing the works in the courthouse by Florence's archaeology superintendency, who suspected something interesting might be uncovered because of the area's historic relevance.

Palchetti said the remains were "comparable" to others found over the last three centuries in the immediate area that have also been attributed to the temple of Isis, the Egyptian goddess of motherhood and fertility who was later adopted by the Greeks and Romans.

The location of the temple is unknown, Palchetti said, but it is believed to have been built just outside the Roman part of the city, near the current courthouse building.

Meanwhile, Florence's Culture Councillor Eugenio Giani said ongoing excavations of an ancient Roman theatre under the city's Palazzo Vecchio will mean members of the public will be able to visit the site in two years' time.

Archaeologists have already uncovered the area where spectators sat and a portion of the orchestra as well as revealed the story of the theatre and its fall into disuse.

Constructed at the end of the first century AD, it was in use until the end of the fourth century before remaining structures were used as a burial place, stalls for animals and a prison during Medieval times.

"We'll continue to work on the central corridor which will give us a direct link with the Cortile della Dogana of Palazzo Vecchio from where people will be able to make the descent," said Giani.

Please visit the site: [http://www.ansa.it/site/notizie/awnplus/english/news/2009-05-28\\_128361264.html](http://www.ansa.it/site/notizie/awnplus/english/news/2009-05-28_128361264.html)

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## **DECODING ANTIQUITY: EIGHT SCRIPTS THAT STILL CAN'T BE READ, BY ANDREW ROBINSON**

The Etruscan Alphabet - Shown here are two of three gold plaques from Pyrgi, circa 500BC. The plaque on the left is written in Etruscan, while the one on the right is written in Phoenician. They both describe the same event - the dedication by the Etruscan ruler Thefarie Velianas of a cult place (Image: Museo di Villa Giulia, Rome).

The Etruscan Alphabet - Shown here are two of three gold plaques from Pyrgi, circa 500BC. The plaque on the left is written in Etruscan, while the one on the right is written in Phoenician. They both describe the same event - the dedication by the Etruscan ruler Thefarie Velianas of a cult place (Image: Museo di Villa Giulia, Rome).

WRITING is one of the greatest inventions in human history. Perhaps the greatest, since it made history possible. Without writing, there could be no accumulation of knowledge, no historical record, no science - and of course no books, newspapers or internet.

The first true writing we know of is Sumerian cuneiform - consisting mainly of wedge-shaped impressions on clay tablets - which was used more than 5000 years ago in Mesopotamia. Soon afterwards writing appeared in Egypt, and much later in Europe, China and Central America. Civilisations have invented hundreds of different writing systems. Some, such as the one you are reading now, have remained in use, but most have fallen into disuse.

These dead scripts tantalise us. We can see that they are writing, but what do they say?

That is the great challenge of decipherment: to reach deep into the past and hear the voices of the dead. When the Egyptian hieroglyphs were deciphered in 1823, they extended the span of recorded history by around 2000 years and allowed us to read the words of Ramses the Great. The decipherment of the Mayan glyphs revealed that the New World had a sophisticated, literate civilisation at the time of the Roman empire.

So how do you decipher an unknown script? There are two minimum requirements. First, there has to be enough material to work with.

Secondly, there must be some link to a known language. It helps enormously if there is a bilingual inscription or identifiable proper names - the Rosetta Stone (see image), for example, is written in both ancient Egyptian and ancient Greek, and also contains the name of the Ptolemy dynasty. If there is no clear link, an attempt must be made to relate the concealed language to a known one.

Many ancient scripts have been deciphered (see "The great decipherments" and The ancient scripts), but some significant ones have yet to be cracked. These fall into three broad categories: a known script writing an unknown language; an unknown script writing a known language; and an unknown script writing an unknown language. The first two categories are more likely to yield to decipherment; the third - which recalls

Donald Rumsfeld's infamous "unknown unknowns" - is a much tougher proposition, though this doesn't keep people from trying.

Most of the undeciphered scripts featured here have been partially deciphered, and well-known researchers have claimed that they have deciphered some much more fully. Further progress is possible for most of them, especially if new inscriptions are discovered, which fortunately happens fairly often.

1 Etruscan

Greek and not Greek

(known script, unknown language)

For those interested in language and writing, the Etruscans are a fascinating and frustrating bunch. Decipherment of the Etruscan language is like trying to learn English from reading nothing but gravestones. The Etruscan script was written in a form of the ancient Greek alphabet, but their language was unlike any other. So although Etruscan sentences can easily be "read", nobody has much idea what they mean, apart from the names of people and places, and a smattering of vocabulary and standard phrases.

See Etruscan script on a gold plaque and an inkwell

The Etruscans were a prehistoric civilisation that arose in western Italy - what is now Tuscany and parts of Umbria - and was absorbed into the Roman empire by the first century BC. The Etruscans were highly literate, leaving thousands of texts. Many Etruscan artefacts are inscribed with the Greek alphabet, almost certainly borrowed from Greek colonists who settled in western Italy around 775 BC.

The everyday Etruscan alphabet is different, however. Although it strongly resembles the Greek one, it differs significantly too. The main difference is that Etruscan letters generally point in the opposite direction to Greek ones, because Etruscan was written from right to left.

Researchers persisted for over a century with efforts to relate Etruscan to other European languages - including Basque - by looking for similarities between readable Etruscan words and words in known languages. The attempt was hopeless. Etruscan is definitely not an Indo-European language and is now regarded as an isolate, like Basque.

Nevertheless, some Etruscan words can be understood from their contexts in inscriptions, such as Ruma (Rome), Clevsina (the city of Chiusi) and Fufluns (the god Dionysus). The problem has been to find the meanings of the many words that are not names. Perhaps 250 words have now been generally agreed, for example ci avil (three years), and this number is increasing as new inscriptions are discovered.

2 Meroitic hieroglyphs

voices of the black pharaohs

(known script, unknown language)

In the first millennium BC, the kingdom of Kush flourished around the two great bends of the river Nile between Abu Simbel and Khartoum, in what is now Sudan. The Kushite (or Meroitic, after the capital Meroe) civilisation was one of the most important early states of sub-Saharan Africa.

In 712 BC, Kushite kings conquered Egypt and were accepted as its 25th dynasty. The "black pharaohs" ruled for nearly 70 years until war with the Assyrians forced the Kushites back to their homeland in 656 BC.

The Meroitic hieroglyphs (see image) date from after this defeat: the Kushite pharaohs used Egyptian hieroglyphs, but from the 3rd century BC these increasingly appeared alongside a new, indigenous script. As in Egypt (for example, on the Rosetta Stone), there are two forms of this script: hieroglyphic, which was used on monuments and had essentially pictographic signs, and everyday cursive, or joined-up, writing.

There are 23 symbols in each form of Meroitic. In that respect it resembles a modern alphabet - unlike Egyptian hieroglyphics, which use hundreds of symbols. Around 1911, Francis Llewellyn Griffith, an Egyptologist at the University of Oxford, deciphered the phonetic values of both Meroitic scripts from inscriptions that record a text in Meroitic and Egyptian scripts.

Meroitic words can therefore be "read", like Etruscan words.

Frustratingly, however, they cannot be understood, because the Meroitic language is unknown. Proper names can be deciphered, and a few dozen other words, such as tenke (west) and ato (water), can be guessed from their contexts, but that is all.

Griffith always believed that Meroitic would eventually be deciphered.

But despite decades of comparisons between Meroitic words and the ancient and modern African languages of the region, no convincing resemblance has yet been detected.

### 3 The New World

#### Olmec, Zapotec and Isthmian

(Olmec: unknown script, unknown language

Zapotec: unknown script, possibly known language

Isthmian: unknown script, possibly known language)

We know that the classical Mayan civilisation (around AD 250 to the 8th century) was literate, but the origins of writing in Central America - and the New World as a whole - are murky. The region has a number of undeciphered ancient scripts. Three have attracted particular interest: Olmec, Zapotec and Isthmian.

The earliest American script may come from the Olmecs, the region's most ancient civilisation, which flourished along the Gulf of Mexico coast of the Isthmus of Tehuantepec from around 1500 to 400 BC. The Olmecs were thought to be illiterate until the late 1990s, when an inscribed stone block was discovered by road builders. Dated to 900 BC, the inscription is made from 62 symbols, some of which are repeated. It is very probably writing, but without the discovery of further inscriptions there is no certainty, and no hope of decipherment.

The Zapotec civilisation of Oaxaca undoubtedly had writing. Some 1200 inscribed objects have been found, ranging from painted walls to pots, bones and shells. The date of the script appears to lie somewhere between 600 and 400 BC.

Scholars have been able to work out the Zapotec calendar and show it to be a precursor of the Mayan one. But even though Zapotec languages are still spoken in the area, it has proved more difficult to reconstruct the language of the script, in part because of the bewildering complexity of the modern Zapotecan language group.

The latest and most controversial of the three scripts is Isthmian (see image). Even its name is not agreed: some call it "epi-Olmec". In 1902, an unusual statuette made of jade was ploughed up in a field in the Olmec area. It represents a man dressed as a duck, and was inscribed with about 70 unknown symbols. Deposited in the Smithsonian Institution in Washington DC, the Tuxtla statuette was the only example of the script until 1986, when fishermen stumbled on a second example in a river: a 4-tonne slab of polished basalt with a much longer inscription.

The script dates to the 2nd century AD. The most likely language is an archaic version of Zoquean, a current language of the Isthmus of Tehuantepec. Two linguists, John Justeson of the State University of New York in Albany and Terrence Kaufman of the University of Pittsburgh, Pennsylvania, have proposed a decipherment based on their reconstruction of "pre-Proto-Zoquean". Unless more inscriptions turn up, this must remain a well-informed conjecture.

4 Linear A  
a Minoan mystery

(partially known script, unknown language)

In 1900, British archaeologist Arthur Evans discovered not one but two unknown scripts, both scratched on clay tablets, while digging at the "Palace of Minos" at Knossos in Crete - the centre of the Bronze-Age Minoan civilisation.

One of these, Linear B, was famously deciphered in 1952, making it Europe's earliest readable writing (see "The great decipherments"). The other, Linear A, remains undeciphered.

Linear B dates from around 1450 BC. It is an archaic form of written Greek used by Greek-speakers who conquered parts of Crete around that time. Linear A is older, from the 18th century BC. It is the script of the Minoan civilisation, and the only solid link we have to the lost Minoan language.

Unfortunately for decipherers, we have much less Linear A than Linear B - around 1500 texts, mostly from Crete but also from other Aegean islands, mainland Greece, Turkey and Israel. The majority of the inscriptions are short or damaged.

The symbols of Linear A (see image) strongly resemble those of Linear B, but this does not mean that a Linear A symbol necessarily has the same sound as a similar Linear B symbol, because Minoan and Greek were different. You can read Linear A using Linear B sounds - but because no one knows Minoan, we cannot be sure if the words are correct.

What can be deduced from such substitutions, however, is that the language of Linear A is not Greek.

We can read Linear A out loud - but since nobody knows Minoan, we cannot be sure if the words are correct

5 Rongo-rongo

the chant of Easter Island

(unknown script, probably known language)

Easter Island is a place of intrigue and mystery, and its indigenous script rongo-rongo is no exception.

Rongo-rongo (see image) means "chants" in Rapanui, the language of Easter Island. Although the language of rongo-rongo is probably similar to Rapanui, the script is complex and baffling. There are only 25 inscriptions, some quite long, and all written on driftwood.

Its age is puzzling. Local legend has it that the writing was brought to the island by boat when Easter Island was settled from Polynesia; the date is unknown, but could have been as early as AD 300. However, the first Europeans to land, a Dutch fleet in 1722, saw no evidence of rongo-rongo. When two Spanish ships arrived in 1770 and made a "treaty" claiming Easter Island for Spain, the islanders "signed" the treaty - but their signatures do not resemble rongo-rongo.

Local legend has it that the script was brought by boat when the island was settled from Polynesia

Captain James Cook, landing in 1774, saw no writing. The first confirmed sighting of rongo-rongo was by a French missionary in 1864, who noted that knowledge of the signs was dying out. Despite efforts by the bishop of Tahiti in the 1870s, no islanders could be found to read the writing. Since then scholars have been at odds on how to interpret it.

Not surprisingly, rongo-rongo has been a powerful kook attractor. One popular, but absurd, idea relates rongo-rongo to the Indus script simply because some of the signs are alike.

One thing is beyond dispute: the direction of reading is unusual, though not unique. To read a rongo-rongo tablet, you start at the bottom left-hand corner and read along the line. Then you turn the tablet by 180 degrees and begin reading the next line up, again from left to right. At the end of that line, you repeat the 180-degree turn, and so on. This is known as reverse boustrophedon ("boustrophedon" is ancient Greek for "as the ox turns" when ploughing).

6 Indus script

sign of the unicorn

(unknown script, possibly known language)

The remains of the Indus valley civilisation cover an area of Pakistan and north-west India about a quarter the size of Europe. At its peak, between 2500 and 1900 BC, its major cities were comparable with those of contemporary Mesopotamia and Egypt.

The exquisitely carved script of this civilisation is known from about 5000 inscriptions, many of them on stones found scattered in the houses and streets of its ruined cities. A frequent motif on the seals is a one-horned quadruped like a unicorn (a creature, legend has it, from India) (see image). The texts are tantalisingly brief. The average length is just five signs, the longest only 20. A few researchers have questioned if they really are writing, but the majority reckon they are.

The texts are tantalisingly brief, with an average length of just five signs

The language of the Indus civilisation may have died out altogether, though some speculate that it relates to the Dravidian languages now spoken only in southern India and in Baluchistan, not far from the Indus valley, where the Dravidian language is known as Brahui. If the Dravidian hypothesis is correct, it might be possible to match words from the old form of Tamil, a Dravidian language spoken in Tamil Nadu, with the Indus signs.

For example, a very common sign is the fish (see below). The Old Tamil word for fish is min. But min has another meaning too - "star" or "planet". Perhaps the fish sign stands for an astral word - a bit like using a pictogram of the sun in a puzzle to mean "son".

Attractive as such speculation is, we are still a long way from deciphering the Indus script. More than 100 decipherments of the script have been published since its discovery in the 1920s, some by respected archaeologists, but they differ widely, often wildly.

7 Proto-Elamite

oldest undeciphered writing

(partially known script, unknown language)

Proto-Elamite is the world's oldest undeciphered script - assuming that it really is a fully developed writing system, which is by no means certain. It was used for perhaps 150 years from around 3050 BC in Elam, the biblical name for an area that corresponds roughly to today's oilfields of western Iran. It is almost as old as the oldest writing of all, the earliest cuneiform from Mesopotamia. Little is known about the people who wrote the script.

Proto-Elamite preceded a partially deciphered script, Linear Elamite, used in the same area 750 years later. Linear Elamite in turn preceded a third script, a cuneiform that the Elamites used for many centuries starting in the 13th century BC. Elamite cuneiform was deciphered in the 19th century.

So there are three Elamite scripts, each separated by about 800 years and with no texts to fill the gaps: no Chaucer or Shakespeare to link Anglo-Saxon with modern English, as it were.

The relationship between Proto-Elamite and Linear Elamite is controversial. The discoverer of Proto-Elamite in the early 20th century was convinced that the two scripts wrote the same language.

Later scholars agreed. But since the 1980s, specialists have become increasingly persuaded that there is no evidence for a shared language and culture. They have worked

out Proto-Elamite arithmetic in impressive detail, but the language of the inscriptions is still completely unknown.

8 Phaistos disc

oldest printing, or hoax?

(unknown script, unknown language)

The notoriously solitary Phaistos disc from Crete appears to be the world's oldest "printed" document. The disc, about 15 centimetres in diameter, occupies pride of place at the Heraklion Museum in Crete.

Some say it should not be regarded as an undeciphered script because it is in fact a hoax - the Piltown Man of ancient writing.

However, most authorities have treated it as genuine since its discovery by Italian archaeologists in 1908 at ancient Phaistos, in an archaeological context suggesting a date of about 1700 BC. Few scholars, however, have been intrepid enough to propose a decipherment.

The disc (see image) is made of baked clay and has inscriptions on both sides consisting of a spiral of symbols impressed into the wet clay with a set of stamps. The 241 or 242 symbols (one is obliterated) were made by 45 different stamps. This is about all that can be stated without fear of overstepping the evidence.

But why should anyone have bothered to produce a set of 45 stamps, rather than "writing" the signs afresh? If it was to mass-produce documents, why have no others been found? And why are the symbols unlike any of the signs of the other Cretan scripts?

One idea is that the disc was imported, possibly from Anatolia (one symbol resembles an Anatolian rock tomb). If so, the disc's language may be some unknowable non-Cretan tongue. Unless more of the script is found, however, the Phaistos disc must remain a perplexing riddle.

Profile

Andrew Robinson is the author of *Lost Languages: The enigma of the world's undeciphered scripts* (Thames & Hudson) and *Writing and Script*:

A very short introduction (to be published by Oxford University Press in August). He is a visiting fellow of Wolfson College, Cambridge The great decipherments

## EGYPTIAN HIEROGLYPHS

WHEN? 1823

WHO? French orientalist Jean-François Champollion

HOW? By starting with the bilingual Rosetta Stone, partly deciphered by the physicist Thomas Young, and applying his profound knowledge of ancient Egypt and the Coptic language, which is similar to ancient Egyptian

## BABYLONIAN CUNEIFORM



WHEN? 1850s

WHO? British Assyriologist Henry Creswicke Rawlinson and Irish clergyman Edward Hincks

HOW? Using Darius the Great's trilingual cuneiform inscription at Behistun in western Persia, written in Old Persian, Babylonian and Elamite cuneiform. Two decades of concentrated study may have helped too

LINEAR B

WHEN? 1952

WHO? British architect and amateur classicist Michael Ventris

HOW? Years of slog, assisted by an architect's analytical thinking plus a flash of insight that the language of Linear B was Greek even in the absence of a bilingual inscription

MAYAN GLYPHS

WHEN? 1952

WHO? Soviet linguist Yuri Knorosov

HOW? By matching the signs in a flawed Mayan-Spanish "alphabet" recorded by a Spanish inquisitor in 16th-century Mexico with signs in ancient Mayan manuscripts, and then matching the words they apparently spelt with words listed in recent Mayan dictionaries.

**Please visit the site: <http://www.newscientist.com/article/mg20227106.000-decoding-antiquity-eight-scripts-that-still-cant-be-read.html?full=true>**

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## A BEACON'S REBIRTH

Can Alexandria's ancient lighthouse, considered to be one of the seven wonders of the ancient world, be rebuilt to shine as it did before? Nevine El-Aref poses the question.

Since its construction between 285 and 246 BC on the island of Pharos off the Eastern Cape (which was connected to the mainland by means of a man-made dyke seven stadions long and hence known as the Heptastadion -- thus giving Alexandria city a double harbour) the lighthouse built by the Greek architect Sastrotes of Cnidus during the reign of Ptolemy II has been famous one way or another. After it had ceased to be a beacon of light indicating the harbour to homecoming sailors, it remained in universal memory as one of the seven wonders of the ancient world. Now there is talk of recreating this epitome of a landmark.

The ancient Alexandria lighthouse played an important role in guiding sailors and navigators across the Mediterranean. In its day it also captured the imagination of the known world, and soon became the symbol of Alexandria. Soon after it was built, the building itself acquired the name of the island. The relationship between the name and the function became so ingrained that the word "pharos" is the root of the word "lighthouse" in several languages.

For nearly 15 centuries the Pharos continued to guide seafarers approaching the coast of Egypt into the city harbour. It was the prototype of many such buildings, and was classified by Antipater of Sidon on his list of ancient wonders. It was a propaganda tool demonstrating the power and strength of the Greeks who ruled Egypt.

The fullest description of it was provided by the famous Arab traveller Abu Haggag Youssef Ibn Mohamed Al-Andaloussi during his visit in 1166 AD. He described it as a three-storey building; the first was a square platform 5.5m high; the intermediate floor was octagonal with an 18.30m side length and 27.45m high; while the third floor was circular with a ceiling 7.3m high supported by eight columns. The tower was surmounted by a cupola and a bronze statue. The total height including the foundation basement was about 117m, that is to say it was one of the tallest man-made structures of the time.

Several other authors proposed different values between 100 and 137m. The building contained about 300 rooms, which were used as living rooms for the lighthouse-keepers and staff or as storerooms. On the top floor, mirrors reflected sunlight during the day while fire was used at night.

The graphic reconstruction elaborated by Herman Thierch, a German who wrote a large work entitled *Pharos* that has served as a standard reference since it was published in 1909, remains up to now the popular view of the Alexandria lighthouse. Thierch studied images from coins, terracotta and Roman mosaics in Libya and Jordan. He also had recourse to a wall mosaic in Saint Mark's in Venice which carries a scene of the lighthouse, and he even undertook a study of various minarets in Egypt which are thought to have been copied from the tower.

With the exception of the Great Pyramid of Giza, the lighthouse survived the longest of the seven wonders -- it stood for about 1,500 years before being damaged by a series of earthquakes between the fourth and 14th centuries. The tower remained intact until the eighth century when its whole upper part was demolished by an earthquake. During the Islamic period the lighthouse was reconstructed by the Tulunids in 868-905 AD, but in 950 AD part of the surface cracked and the tower was reduced in height by 22m. In 1261 the lighthouse was again hit by an earthquake and another section collapsed. In 1272 Al-Nasser Salaheddin El-Ayoubi restored it again, which allowed it to survive until the 14th century when a severe earthquake hit the city and it collapsed completely.

The Muslim traveller Ibn Jubayr visited the city in 1183 and described the lighthouse as "the eyes fail to comprehend it and words are inadequate, so vast is the spectacle." The Arab traveller Ibn Battuta reported in the early 14th century that the lighthouse could no longer be entered and it lay in ruins, with even the stubby remnants having disappeared. A century later Sultan Qaitbay built his mediaeval fortress on top of the ruins, using the fallen stones.

Archaeologist Jean Yves Empeur, director of the French Centre for Alexandrian studies, wrote in his book published in 2002 that the ancient authors supplied only a few pieces of information about the Pharos, and in particular about its building materials. The Greek geographer Strabo, during his visit to Alexandria in about 25 BC, mentioned that the Pharos was build of white stone. None of the many early Arab travellers who saw the tower gave any idea about the type of stone used for building and decoration. Thierch indicates the presence of marble, limestone and bronze for the decorative statues.

Diverse theories about the building material of the lighthouse have followed one another. Some suggest it was built either of local limestone, nummulitic limestone, granite, alabaster or white marble. Contradictory information about the building materials overwhelmed the whole scientific and archaeological sphere in 1994, when Empeur commenced his submarine excavations in the area of the Qaitbay fortress. A great collection of ancient colossi, massive stone blocks and sphinxes have been found, among them 50 different-sized blocks that were part of the lighthouse.

Scientific examination of these blocks revealed that the lighthouse was constructed essentially of granites and sandstones, as well as some greywacke, marble and limestone. Archaeologists have put forward three reasons for the lack of limestone and marble blocks; first, these softer stones were difficult to identify underwater after having been eroded over the centuries by marine flora and fauna; second, the need for chalk to manufacture cement for the city of Alexandria; and third that these stones are much more easily worked and therefore were taken to be reemployed in later constructions such as the fortress itself and the adjacent Ottoman tower.

Since that time every archaeologist has dreamed of the resurrection of such a great monument. But can Alexandria's Pharos really be reconstructed in its original, glorious form?

This question has perplexed archaeologists and scientists. They do not really know the materials used in construction, nor the exact shape and height.

Three years ago, however, answers to these questions were made possible when Egypt participated in a three-year-long European Union project called the MIDSTONE. This project aimed at preserving ancient Mediterranean sites in terms of their ornamental and building stone through determining stone provenance to proposing conservation and restoration techniques. The MIDSTONE project proposes to contribute to the knowledge and conservation of three of the most important ancient sites in North Africa: Voluble in Morocco, Djemila in Algeria and the Alexandria lighthouse in Egypt. An atlas of the stones of every site will be also provided within the project.

This year the Atlas of the Stones of Alexandria Lighthouse is being presented in a three-day conference at Cairo University and the Bibliotheca Alexandrina.

Amr El-Tibi, the project coordinator, says the scientific objective of the project is to identify the stones of the lighthouse and determine their provenance in terms of the geographical area. The data and results obtained are being presented in an accessible form including photographs and maps, i.e. the Atlas.

El-Tibi explained that a detailed study of the blocks was performed to categorise megascopically the main types of stones related to the Pharos, and a first series of 32 samples was collected. As most of the stones related to the lighthouse were still under water, a second series of 35 samples was collected by divers from submerged architectural blocks. The whole of the 67 archaeological samples were described megascopically and categorised in the laboratory in terms of their petrographic type of stone and physical chemical properties. Studies revealed that the Pharos was indeed composed of granite, greywacke limestone, fine to coarse-grained sandstones, marble and sandstones with dolomitic cement to sandy dolostone found at the basement of Qaitbay fort.

The stones derived from two quarries not far from Alexandria at Mexx and Abusir, as well as from quarries in Moqattam near Cairo; Samalut; Minya; and Drunka in Assiut; Serai and Tarawan.

Zahi Hawass, secretary-general of the Supreme Council of Antiquities (SCA), told Al-Ahram Weekly that he was very happy to introduce the results of this important project on the study of the stones of the Alexandria lighthouse. "This outstanding cooperative effort between the SCA and the European Union brought together teams from Egypt, France, Italy, Greece and Germany to identify and study remains of the lighthouse that are still at the site today," Hawass said.

He added that with the help of Empereur, who drew the attention to the location of the pieces lying submerged in the harbour of Alexandria, the team was able to classify the stone blocks that made up the remains of the lighthouse. One of the most interesting results, he said, was the identification of stones that they were able to match with the quarries from which they came. The provenance of the coarse-grained pink and grey granite blocks was from the quarries of Aswan, while pieces of greywacke were confirmed to have come from Wadi Hammamat. They also, Hawass said, succeeded in identifying the quarry in Greece from where the marble used in the lighthouse was obtained.

"The studies of these different types of stone will obviously make it possible to use correct methods for their conservation," Hawass said. "I believe that this excellent work to document the stones used in building the Alexandria lighthouse could eventually be used as a guide to reconstructing this amazing structure."

**Please visit the site:** <http://weekly.ahram.org.eg/2009/950/heritage.htm>

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## **NEW 'MOLECULAR CLOCK' AIDS DATING OF HUMAN MIGRATION HISTORY**

ScienceDaily (June 4, 2009) — Researchers at the University of Leeds have devised a more accurate method of dating ancient human migration – even when no corroborating archaeological evidence exists.

Estimating the chronology of population migrations throughout mankind's early history has always been problematic. The most widely used genetic method works back to find the last common ancestor of any particular set of lineages using samples of mitochondrial DNA (mtDNA), but this method has recently been shown to be unreliable, throwing 20 years of research into doubt.

The new method refines the mtDNA calculation by taking into account the process of natural selection - which researchers realised was skewing their results - and has been tested successfully against known colonisation dates confirmed by archaeological evidence, such as in Polynesia in the Pacific (approximately 3,000 years ago), and the Canary Islands (approximately 2,500 years ago).

Says PhD student Pedro Soares who devised the new method: "Natural selection's very gradual removal of harmful gene mutations in the mtDNA produces a time-dependent effect on how many mutations you see in the family tree. What we've done is work out a formula that corrects this effect so that we now have a reliable way of dating genetic lineages.

"This means that we can put a timescale on any part of the particular family tree, right back to humanity's last common maternal ancestor, known as 'Mitochondrial Eve', who lived some 200,000 years ago. In fact we can date any migration for which we have available data," he says.

Moreover, working with a published database of more than 2,000 fully sequenced mtDNA samples, Soares' calculation, for the first time, uses data from the whole of the mtDNA molecule. This means that the results are not only more accurate, but also more precise, giving narrower date ranges.

The new method has already yielded some surprising findings. Says archaeogeneticist Professor Martin Richards, who supervised Soares: "We can settle the debate regarding mankind's expansion through the Americas. Researchers have been estimating dates from mtDNA that are too old for the archaeological evidence, but our calculations confirm the date to be some 15,000 years ago, around the time of the first unequivocal archaeological remains.

"Furthermore, we can say with some confidence that the estimate of humanity's 'out of Africa' migration was around 60-70,000 years ago – some 10-20,000 years earlier than previously thought."

The team has devised a simple calculator into which researchers can feed their data and this is being made freely available on the University of Leeds website.

The paper is published in the current edition of the American Journal of Human Genetics.

**Journal reference:**

1. Pedro Soares , Luca Ermini , Noel Thomson , Maru Mormina , Teresa Rito , Arne Röhl , Antonio Salas , Stephen Oppenheimer , Vincent Macaulay and Martin B. Richards. Correcting for Purifying Selection: An Improved Human Mitochondrial Molecular Clock. American Journal of Human Genetics, 2009; DOI: 10.1016/j.ajhg.2009.05.001

Adapted from materials provided by University of Leeds, via EurekAlert!, a service of AAAS.

**Please visit the site:**

<http://www.sciencedaily.com/releases/2009/06/090604124023.htm>

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## **ANCIENT DEATH-SMILE POTION DECODED? BY JAMES OWEN FOR NATIONAL GEOGRAPHIC NEWS**

Thousands of years before the Joker gassed comic book victims into a grinning death, Phoenician colonists on the island of Sardinia (map) were forcing smiles on the faces of the dead.

Now scientists say they know just how the ancient seafaring traders created the gruesome smiles some 2,800 years ago—not with a toxic gas like Batman's nemesis but with a plant-based potion.

And someday that plant might be used to Botox-like effect, perhaps reducing rather than adding smile lines, the researchers speculate.

### **Ancient Death Grins**

By the eighth century B.C., Homer had coined the term "sardonic grin"—"sardonic" having its roots in "Sardinia"—in writings referring to the island's ritual killings via grimace-inducing potion.

Elderly people who could no longer care for themselves and criminals "were intoxicated with the sardonic herb and then killed by dropping from a high rock or by beating to death," according to the new study.

For centuries the herb's identity has been a mystery, but study leader Giovanni Appendino and colleagues say they have discovered a sardonic grin-inducing compound in a plant called hemlock water-dropwort.

The white-flowered plant grows on celery-like stalks along ponds and rivers on the island, now part of Italy.

### **Modern Suicide, Ancient Mystery**

About a decade ago, a Sardinian shepherd committed suicide by eating a hemlock water-dropwort, leaving a corpse with a striking grin.

The death spurred study co-author Mauro Ballero, a botanist at the University of Cagliari in Sardinia, to study every dropwort-related fatality on the island in recent decades.

For the new study, Ballero and colleagues detailed the molecular structure of the plant's toxin and determined how it affects the human body.

Study leader Appendino, an organic chemist from the Università degli Studi del Piemonte Orientale in Italy, said, "The compound is highly toxic and causes symptoms similar to those described by the ancients for the sardonic smile, including facial paralysis."



(See pictures of the Phoenicians' enduring legacy around the Mediterranean.)

Hemlock water-dropwort "was already known to contain neurotoxins and was the most likely candidate for the sardonic herb," Appendino said.

The hairy buttercup (aka the Sardinian buttercup) was also a candidate, but that plant doesn't grow in the damp places mentioned in ancient texts, nor does it make sense in terms of its toxic properties, Appendino said.

"Besides, Sardinia is the only place all over the Mediterranean where [hemlock water-dropwort] grows," he added.

### **A Better Botox?**

A member of the deadly hemlock family, the herb is especially dangerous because of its fragrant smell and sweet-tasting roots.

"Generally poisonous plants are bitter or in some way repel people," Appendino said.

Hemlock water-dropwort "is only the second case I know of a toxic plant that is actually attractive to our senses. People might easily eat it in a potion," he added—or perhaps apply it in a lotion.

Appendino speculates that the plant may prove to have a cosmetic application.

"It relaxes the muscles," he said, "so it removes wrinkles."

Findings published in the Journal of Natural Products.

**Please visit the site:**

<http://news.nationalgeographic.com/news/2009/06/090602-smiling-death-potion.html>

## **ITALY PUTS BAGHDAD MUSEUM ONLINE, IRAQ'S TREASURES ON SHOW IN EIGHT 'VIRTUAL' HALLS**

(ANSA) - Rome, June 9 - The treasures of Baghdad's National Museum went online for the first time Tuesday as Italy inaugurated the Virtual Museum of Iraq as part of an ongoing cultural collaboration between the two countries.

Looted during the United States-led invasion in 2003, the Baghdad Museum partially reopened in February after six years but the website is designed to make its most important artefacts accessible to everyone.

The site ([www.virtualmuseumiraq.cnr.it](http://www.virtualmuseumiraq.cnr.it)), in Arabic, English and Italian, offers visitors the chance to walk through eight virtual halls and admire works from the prehistoric to the Islamic period, while videoclips reconstruct the history of the country's main cities.

"It's not a simple container of the objects in the museum but a real virtual journey, created for the general public and the scientific community, across 6,000 years of Mesopotamian history," said Italy's National Research Council Director Roberto De Mattei.

Among the artefacts on display in the Sumerian hall of the virtual museum is the famous Warka Mask, a marble head of a woman from Uruk dated to 3,400-3,100 BC, which, as with many of the works, visitors can rotate to get an almost 360 degree view.

In the Assyrian hall visitors can also admire colossal limestone statues of human-headed, winged bulls called lamassu, dated to the eight and ninth centuries BC, that guarded the ancient cities of Nimrud on the River Tigris and Dur Sharrukin, modern-day Khorsabad.

Presenting the website Tuesday, Italian Foreign Minister Franco Frattini said the virtual museum "has allowed Italy's excellence in this field to shine and above all to make culture a tool to allow a population that has suffered greatly from the war to get back on their feet, to find through their own cultural and historic heritage a sense of unity".

The speaker of Italy's lower house, Gianfranco Fini, who promoted the virtual museum as foreign minister in 2005, was also present at the inauguration.

Italy contributed one million euros and provided expert staff to help restore the museum, creating a restoration laboratory in Baghdad and overhauling the museum's Assyrian and Islamic galleries.

In February Frattini said Italy would help Iraq create a new police unit to fight the trafficking of stolen works based on Italy's crack team of art cops, who have gained a worldwide reputation for their work in recovering stolen works and stopping illegal trading.

He said Italy also planned to help reopen the museums of Najaf and Nassiriya near the ancient Sumerian city of Ur, recorded in the Bible as the birthplace of Abraham.

Present-day Iraq lies on the site of ancient Mesopotamia between the Tigris and Euphrates rivers and the Baghdad museum boasts one of the best collections of ancient artefacts in the world.

Around 15,000 of the museum's relics were carried off during a 48-hour looting spree in 2003 in the wake of the US invasion.

Denounced as the most catastrophic theft of antiquities since World War II, the plundering sparked international outrage and condemnation of America for failing to prevent the thefts.

Italian art cops were enlisted in the race to track down the looted treasures.

While around 6,000 works have been returned, including the Warka Mask, many other pieces are still missing.

The police believe many of the treasures found their way to a collection centre for smuggled Iraqi artefacts which has contacts with interested buyers, particularly in Britain, Switzerland and the United States.

**Please visit the site:**

**[http://www.ansa.it/site/notizie/awnplus/english/news/2009-06-09\\_109376758.html](http://www.ansa.it/site/notizie/awnplus/english/news/2009-06-09_109376758.html)**

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## **NEW THRACIAN TOMB UNEARTHED CLOSE TO BULGARIA'S KAZANLAK**

Kazanlak. A team of archeologists have unearthed a new Thracian tomb close to the southern town of Kazanlak, announced Dr. Kosyo Zarev, director of the history museum in the town of Kazanlak, Focus – Veliko Tarnovo Radio reported.

The tomb is in close proximity to the village of Dolno Izvorovo. It is situated a few meters under a tumulus that is a cultural monument. It is located deep under the earth in the periphery of the tumulus.

Archeologists say the tomb was destroyed in antiquity.

In November 2008 the tumulus was attacked by treasure hunters and after that archeologist Georgi Nihrizov started rescue excavations.

In November the police were alerted that unidentified persons were excavating the tumulus. Four people were detained then. Three of them have criminal records.

Denitsa GEORGIEVA

Please visit the site: <http://www.focus-fen.net/index.php?id=n183849>

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# **BULGARIA: DUTCH** **ANTHROPOLOGISTS RESEARCH** **BULGARIA NEOLITHIC** **ARCHAEOLOGY SITE**

A team of Dutch anthropologists has arrived to the Bulgarian village of Dzhulyunitsa to research the Neolithic archaeological site there.

The object of their research will be oldest funeral in the Balkans - a funeral of a person at the age of 12-13, which dates back to 6300-6150 BC.

The early Neolithic funeral was discovered in 2004 by Nedko Elenski, an archaeologist at the Regional History Museum of the nearby city of Veliko Tarnovo.

The anthropologists from the Netherlands are taking samples from the bones of the buried child in order to conduct further research. They are going to use DNA analysis in order to reveal more information about the people who lived in central northern Bulgaria some 8000 years ago.

The Neolithic settlement at Dzhulyunitsa existed between 6300 and 5700 BC. The causes of its demise are still known, according to Elenski. Two other graves dating back to 4000 BC have also been discovered nearby.

In 2005, Nedko Elenski also discovered pieces of 8000 year-old corroded metal, which turned out to be copper. These finds have been sent to Germany in order to establish whether the metal had been worked up by humans.

Another interesting fact about the contemporary village of Dzhulyunitsa is that it is the home place of Bulgarian sumo wrestler Kaloyan Mahlyanov - Kotooshu.

Please visit the site: [http://www.novinite.com/view\\_news.php?id=105092](http://www.novinite.com/view_news.php?id=105092)

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## **OLDEST HUMAN SETTLEMENT IN AEGEAN UNEARTHED ON LIMNOS ISLAND**

The ruins of the oldest human settlement in the Aegean found so far have been unearthed in archaeological excavations by a team of Greek, Italian and American archaeologists on the island of Limnos, headed by Thessaloniki Aristotle University (AUTH) professor of Prehistoric Archaeology Nikos Efstratiou.

The excavation began in early June and the finds brought to light so far, mainly stone tools of a high quality, are from the Epipaleolithic Period approximately 14,000 years ago. The finds indicate a settlement of hunters, food-collectors and fishermen of the 12th millennium BC.

Until now, it was believed that the oldest human presence in the Aegean had been located in the Archipelagos of the so-called Cyclops Cave on the rocky islet Yioura, north of the island of Alonissos, and at the Maroula site on Kythnos island, dating to circa 8,000 (8th millennium) BC.

The excavations are being conducted at the Ouriakos site on the Louri coast of Fyssini in Moudros municipality on Limnos, with the assistance of the municipality and funding by the Institute for Aegean Prehistory (INSTAP).

Limnos is considered to be a region with significant prehistoric archaeological finds, such as the Poliochne settlement that was inhabited from the middle of the 5th millennium BC to the end of the 2nd millennium BC, and the Koukonisi islet settlement dating approximately to the same chronological period, from the Early to the Late Bronze Ages.

**Please visit the site:**

[http://www.ana-  
mpa.gr/anaweb/user/showplain?maindoc=7735875&maindocimg=7735858&service  
=144](http://www.anam-pa.gr/anaweb/user/showplain?maindoc=7735875&maindocimg=7735858&service=144)

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## **WHO'S IN THE ALEXANDER SARCOPHAGUS? NOT ALEXANDER THE GREAT, THOUGH HE BATTLES HEROICALLY IN ITS HIGH-RELIEF FRIEZES, BY JUDITH H. DOBRZYNSKI**

Sidon, a port city about 25 miles south of Beirut whose rich history dates to 4000 B.C., was among the most successful of the Phoenician city-states. In the fourth century B.C., it fell to Alexander the Great, entering a Hellenistic age that lasted for more than 100 years until the Romans took over. It changed hands several more times before becoming part of the Ottoman Empire in the 17th century.

So it is not surprising that when, in the mid-1800s, archaeologists started exploring Sidon, they found treasures. The French turned up (among other things) a sarcophagus that belonged to a Phoenician king named Eshmunazar II and sent it back to the Louvre. Later, a Turk named Osman Hamdi Bey, who had studied in Paris, became director of the Archaeological Museum in Istanbul and began leading his own excavations in Sidon. In 1887, his team hit upon more than two dozen sarcophagi. Many were stunning, including the Sarcophagus of Mourning Women, which shows 18 comely, elegant females in varying expressions of grief; it's now in the Istanbul museum.

But the star discovery was clearly a fantastically beautiful burial chamber depicting Alexander in battle and at hunt in high-relief. One glance told the Ottoman archaeologists that it was made for someone special. Given its date—fourth century B.C.—and its Hellenistic style, they proposed that it belonged to Alexander.

It didn't, everyone now says. Alexander's tomb has never been found (though a few academics argue that a sarcophagus found in Alexandria and now at the British Museum is his; the British Museum disagrees). The specimen in question, which nevertheless became known as the Alexander Sarcophagus, was likely carved for Abdalonymos, a gardener of royal blood who was made Sidon's king by Alexander in 332 B.C. (some scholars disagree about this, too).

But there is no debate about its status as a masterpiece. The Alexander Sarcophagus sits in a place of honor at the Archaeological Museum and is unmistakably a work of the highest artistic order, among the most important classical antiquities ever discovered. It is totally intact and in almost perfect condition. Despite its 2,000-plus years, it bears traces of the garish reds, yellows and other colors it once wore.

Made of Pentelic marble—the same stone used for the structures on the Acropolis—the sarcophagus tells a story on each of its four sides. Two are battle scenes; two show hunts. Alexander, with his determined visage and curly cropped hair, is instantly recognizable and decidedly heroic. In fact, while the depictions on the friezes are accurate as to the style of arms and dress and detailed reputedly even to the fingernails (I couldn't get that

close), and while they are realistic, not idealized figures, the overall result contains more than a dash of propaganda.

The first and perhaps greatest panel depicts the battle of Issus in 333 B.C., the crucial moment when Alexander of Macedonia defeated Persia for primacy in Asia Minor. The Persian emperor Darius III had expected an invasion and, because Alexander's reputation preceded him, chose to lead his own army. But though Alexander was outnumbered, he outmaneuvered Darius tactically; his troops waged a fierce and bloody battle, destroying the Persian army.

On this frieze, Alexander rides a rearing horse, charging a Persian and trampling another one underfoot. The sculpture is so three-dimensional that it practically steps off the stone. Alexander, his face intense, makes eye contact with a Persian he targets with a spear (presumably made of metal, and missing, as are all the spears made for the sarcophagus); the Persian cowers in fear. Nearby, an equally fervent pair of warring foot soldiers are at each other's throats. And so it goes throughout what could be construed as six scenes: Alexander's army shows its muscles, literally (especially the leg muscles), while the Persians are covered in historically accurate trousers and head coverings that conceal theirs. You can read the agony on the face of a dying Persian, one among many scattered on the ground. Alexander's army simply shows determination.

On the opposite long frieze, however, things have changed. Alexander is now in control of a unified country, and the Greeks and the Persians, still easy to discern by their dress (some Greeks are nude, and all are bare-headed), are happily hunting lion and stag together. Again, Alexander rides a rearing horse, his mantle flowing in the wind, a dog near his feet. He encourages the Persian—perhaps Abdalonymos—ahead of him, whose horse encounters a hungry lion. The lion's claws pierce the horse, and his jaw bites its stomach. But Abdalonymos attacks with a spear, while another Persian prepares to land a blow on the beast with an ax.

The second most prominent figure in both scenes, some scholars believe, is Alexander's close friend from Macedonia, Hephaestion.

The two short sides are similar, if simpler. One depicts the Battle of Gaza in 312 B.C.; in the other, Persians, including another figure thought to be Abdalonymos, hunt a panther.

The Alexander sarcophagus is shaped like a temple, with a pitched roof adorned with carved scale-like tiles. Gargoyles sit on the edges. Small friezes have been carved in the pediments. Between the roof and the friezes, and below them, panels are trimmed in vine leaves, Greek labyrinths and egg-and-dart motifs. The proportions work.

No one knows who made this exquisite object. Some experts have suggested that the hand of as many as six sculptors can be detected, but the work is so consistently good that you could have fooled me.

There was a painter, too. Near the sarcophagus in the Archaeological Museum, the Turks have placed a model displaying what one part of the sarcophagus, Alexander on his charging horse, would have looked like had its colors remained. To eyes now expecting



Greek artifacts to be white marble, the magenta, red and gold seem to clash. But even then, it's easy to see a jewel of a piece.

—Ms. Dobzynski writes about the arts for The Wall Street Journal and other publications and blogs at [www.artsjournal.com/realcleararts](http://www.artsjournal.com/realcleararts).

**Please visit the site:**

<http://online.wsj.com/article/SB10001424052970204621904574246094055079788.html>

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## **MODELS OF EARLIEST (CAMEL- PULLED) VEHICLES FOUND JENNIFER VIEGAS, DISCOVERY NEWS**

Some of the world's first farmers may have sped around in two-wheeled carts pulled by camels and bulls, suggests a new analysis on tiny models of these carts that date to 6,000-5,000 years ago.

The cart models, which may have been ritual objects or children's toys, were found at Altyndepe, a Chalcolithic and Bronze Age settlement in Western Central Asia near Ashgabat, Turkmenistan. Together with other finds, the cart models provide a history of how wheeled transportation first emerged in the area and later developed.

"Horsepower" is a common term today, but the ancients had bull-power, followed by camel-power, researcher Lyubov Kircho explained to Discovery News.

"I think that the carts pulled by bulls were mostly used in agriculture in the 4th millennium, when the climate was more humid," said Kircho, who is at the Institute for the History of Material Culture at the Russian Academy of Sciences.

His study, published in Russian, appears in the journal *Archaeology, Ethnology and Anthropology of Eurasia*. An English version has been accepted for publication in the *Proceedings of the 19th International Conference of the European Association of South Asian Archaeologists*.

As time went on, he believes the carts carried heavy goods, such as metals, alabaster and the coveted, semi-precious stone, lapis lazuli, over long distances.

He added, "Later this kind of long distance transport became impossible (due to the region becoming more arid), and the people began to use the camel in the middle of the third millennium B.C."

The earliest of the cart models he studied had two wheels with shafts linked to a yoke. Visual representations of the associated harness suggest oxen were the primary draft animals. The carts at this stage were not driven chariot-style, but a person instead could have "directed the bulls from the side," which Kircho says would have been "the easiest way" to control both the cart and its animal pullers.

Carts dating to the second half of the third millennium B.C. gained an additional two wheels.

"The most common type had high walls and two shafts, drawn by a single animal -- a camel or, less often, a bull," said Kircho.

The design of the carts, and the behavior of camels, suggests just a single camel pulled each cart.

"It is very difficult to use a pair of camels," he explained. "They are too malicious."

Prehistoric little boys may have played with vehicles just as they do today, since at least one of the early model carts was found in the grave of a boy who died at age 11.

The carts may help to explain apparent connections between the early residents of what is now Turkmenistan and the ancient people of south-eastern Iran and southern Afghanistan. Wheeled transportation would have permitted travel and the sharing of goods and ideas.

Kircho notes that a unity of these places was reflected in their "house-building traditions, collective sequential burials in mudbrick chambers, and close parallels between the composition of the grave offerings and types of seals."

The early camel and bull-drawn carts likely led to the emergence of some of the first dedicated "freeways" for vehicles. David Christian, author of the book "A History of Russia, Central Asia and Mongolia," describes a "huge monumental gateway" that was erected in Altyndepe around 3500 B.C.

"It was 15 meters (over 49 feet) wide, and divided into two alleys: the narrower one for pedestrians, and a wider one paved with stones for carts and wheeled traffic," he explained.

Christian added that the main city had a population of around 6,000-7,000 people but, perhaps due to the convenience of wheeled transportation, mini suburb-type communities quickly sprouted around the more urban hub.

**Please visit the site: <http://dsc.discovery.com/news/2009/06/26/wheeled-vehicle-camel.html>**

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## **NEW DISCOVERIES AT SAQQARA**

Minister of Culture, Farouk Hosni, announced today that Egyptian archaeologists, performing routine conservation work at the southern side of Saqqara's step pyramid (2687-2668 BC), have stumbled upon what is believed to be a deep hole full of the remains of animals and birds. The mission has also found that the hole's floor is covered with a layer of plaster.

Dr. Zahi Hawass, Secretary General of the Supreme Council of Antiquities (SCA), has stated that the mission unearthed a large quantity of golden fragments during their restoration work at the southern tomb of Djoser's pyramid. These may have been used by the ancient Egyptians of the Late Period to decorate wooden sarcophagi or to cover cartonnage. Thirty granite blocks were also discovered, each weighing five tons. These blocks, Dr. Hawass explained, belonged to the granite sarcophagus that once housed Djoser's wooden sarcophagus - the final resting place of the king's mummy.

While cleaning the internal corridors of the pyramid, the mission has also found limestone blocks bearing the names of King Djoser's daughters, as well as wooden instruments, remains of wooden statues, bone fragments, the remains of a mummy, and different sizes of clay vessels.

Please visit the site: <http://drhawass.com/blog/press-release-new-discoveries-saqqara> [Go there for pix.]

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## **STONE AGE WELLS FOUND IN CYPRUS**

Archaeologists have found a group of water wells in western Cyprus believed to be among the oldest in the world.

The skeleton of a young woman was among items found at the bottom of one shaft.

Radiocarbon dating indicates the wells are 9,000 to 10,500 years old, putting them in the Stone Age, the Cypriot Antiquities Department says.

A team from Edinburgh University has found six such wells, near the coastal town of Paphos. They are said to show the sophistication of early settlers.

According to Thomas Davis, director of the Nicosia-based Cyprus American Archaeological Research Institute, "the fact that they were using wells and that they tapped into the island's water table shows heightened appreciation for the environment".

The latest five-metre (16-foot) shaft to be discovered had small natural channels in the bedrock at the bottom, confirming it was a water well.

In addition to a poorly preserved young woman's skeleton the silted-up well contained animal bone fragments, worked flints and some stone jewellery.

The wells were unearthed by an excavator at a construction site.

They date from the time that permanent settlements first appeared in Cyprus, the Associated Press news agency reports.

**Please visit the site: <http://news.bbc.co.uk/2/hi/europe/8118318.stm>**

## **PICTURES: PREHISTORIC EUROPEAN CAVE ARTISTS WERE FEMALE**

Inside France's 25,000-year-old Pech Merle cave, hand stencils surround the famed "Spotted Horses" mural.

For about as long as humans have created works of art, they've also left behind handprints. People began stenciling, painting, or chipping imprints of their hands onto rock walls at least 30,000 years ago.

Until recently, most scientists assumed these prehistoric handprints were male. But "even a superficial examination of published photos suggested to me that there were lots of female hands there,"

Pennsylvania State University archaeologist Dean Snow said of European cave art.

By measuring and analyzing the Pech Merle hand stencils, Snow found that many were indeed female--including those pictured here. (Also see: pictures of hand stencils through time.)

**Please visit the site:**

<http://news.nationalgeographic.com/news/2009/06/photogalleries/cave-handprints-actually-women-missions-pictures/index.html> [Go there for pix]

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## **POPE CLAIMS HUMAN REMAINS BELONG TO ST PAUL**

Human remains found beneath the Vatican have been identified as belonging to St Paul, Pope Benedict XVI said, apparently laying to rest the mystery of a tomb first discovered in the city in 2006.

Archaeologists found material and fragments of bone dating to the first or second century AD inside the tomb at the basilica of St Paul Outside the Walls in Rome.

Vatican experts claim the tomb's position, underneath the epigraph Paulo Apostolo Mart (Paul the Apostle and Martyr), at the base of the main altar is proof that it belongs to the apostle.

The pope said the tomb had not been opened but that a probe inserted through a small hole had revealed traces of purple linen decorated with gold sequins, blue material and red incense grains as well as the remains. "Small fragments of bone were carbon dated by experts who knew nothing about their provenance and results showed they were from someone who lived between the first and second century," he said.

"This seems to confirm the unanimous and uncontested tradition that these are the mortal remains of Paul the apostle," he said, adding that the discovery "fills our souls with great emotion".

The pope made the announcement from the basilica as he celebrated the end of the Pauline year, which has marked the 2,000th anniversary of the apostle's birth. It also comes a day after Vatican archaeologists uncovered what they believe to be the oldest icon of St Paul in a Rome catacomb, dating to the late fourth century.

St Paul was a Roman Jew who converted to Christianity after he saw a light on the road to Damascus. His letters in the New Testament are considered highly influential in Christian thinking.

Tradition holds that Paul was beheaded by the Emperor Nero around AD 62-65 and buried in a vineyard over which the Emperor Constantine built a basilica in 324. St Paul Outside the Walls is the second biggest church in Rome after St Peter's.

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<http://www.fordham.edu/halsall> Internet History Sourcebooks Project

BLOG: <http://english eclectic.blogspot.com/>

MEDIEV-L List: <http://scholar.chem.nyu.edu/mediev-l/mediev-l.html>

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Please visit the site: <http://www.guardian.co.uk/world/2009/jun/29/st-paul-vatican-pope>

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## **ROME CATACOMB REVEALS "OLDEST" IMAGE OF ST PAUL**

ROME (Reuters) - Vatican archaeologists using laser technology have discovered what they believe is the oldest image in existence of St Paul the Apostle, dating from the late 4th century, on the walls of catacomb beneath Rome.

Vatican newspaper Osservatore Romano, revealing the find on Sunday, published a picture of a frescoed image of the face of a man with a pointed black beard on a red background, inside a bright yellow halo. The high forehead is furrowed.

Experts of the Pontifical Commission for Sacred Archaeology made the discovery on June 19 in the Catacomb of Santa Tecla in Rome and describe it as the "oldest icon in history dedicated to the cult of the Apostle," according to the Vatican newspaper.

The discovery, which involved removing layers of clay and limestone using lasers, was announced a day before Rome observes a religious holiday for the Feasts of St Peter and St Paul.

Peter and Paul are revered by Christians as the greatest early missionaries. Converting on the road to Damascus following a blinding vision of Jesus, Paul took the Gospel to pagan Greeks and Romans and met his martyrdom in Rome in about 65 AD.

Early Christians in Rome buried their dead in catacombs dug into the soft rock under the city and decorated the underground walls with devotional images, often in the Pompeian style.

(Writing by Stephen Brown; Editing by Sophie Hares)

**Please visit the site:**

**<http://www.reuters.com/article/scienceNews/idUSTRE55R0ZW20090628>**

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# **TALES FROM A LOST CITY- ARCHAEOLOGISTS UNCOVER SECRETS OF DAILY LIFE AMONG THE GREAT PYRAMIDS OF GIZA SUNDAY, BY DOUG CARUSO THE COLUMBUS DISPATCH**

The Egyptians who built the giant pyramids on the Giza Plateau 4,500 years ago ate dense bread, choice cuts of meat and preserved fish.

They slept in military-style barracks and belonged to work gangs with names such as the "Drunkards of Menkaure."

Archaeologist Mark Lehner knows these details because he spent the past two decades digging them up from their lost city.

Nearby are the pyramids and the Great Sphinx, icons most people associate with Egyptian archaeology. But Lehner likens those to what someone might find someday if they dig up the National Mall in Washington, D.C.

"What would you know about their diet or the economy or a crisis in the economy or how much they changed in 300 years since George Washington unless you dig the outlying parts of D.C.?" he asked.

His team's treasures -- grain mills, animal bones and pieces of clay seals -- are found in bakeries, barracks and the homes of scribes.

Lehner and his colleague, Ana Tavares, were advisors for the Lost Egypt exhibit that opened May 30 at COSI. They spoke with The Dispatch last month when they were in Columbus.

Their work is heavily represented in the exhibit in sections about mapping, animal bones and the imprinted clay seals that scribes used on bags, boxes and important documents.

They focus on the day-to-day life of Old Kingdom Egypt and seek a more intimate view of a culture that disappeared beneath the sand.

"What I take in the title of the COSI exhibit Lost Egypt is that it's talking about getting back that part of Egypt that is lost, which is all the people and the individuals," Lehner said.

"We're trying to reconstruct a whole city and how people lived, so we'll go for anything: the fabric of the pottery, the sealings, we'll go for it all."

First, he had to find the city.

Egyptologists knew that the tens of thousands of people who built the pyramids must have been housed somewhere.

Lehner spent three years surveying the Great Sphinx, mapping it by hand, block by block. He then turned his attention to the Giza Plateau, where the Sphinx and the three key Fourth Dynasty pyramids stand.

He grew up in North Dakota and went to Egypt in the early 1970s as an undergraduate at the American University in Cairo with a New Age idea that refugees from Atlantis had buried their hall of records beneath the Sphinx. But after spending years acquainting himself with what he now calls "bedrock reality," his perspective changed.

"It shifted, really, to one of science, trying to understand where the city was, surveying the landscape to see what stories the landscape told. Saying, 'Here are the quarries, here are the ramps, here's where the harbor was and, therefore, the city should be out there,' " said Lehner, who also teaches three months a year at the University of Chicago.

"The really neat thing about our project is that we could go out there in 1988 and over the next 20 years we tested that hypothesis, which is the best of science. And guess what? Sure enough, there it was."

Since then, three areas of the city have emerged, said Tavares, assistant field director for Ancient Egypt Research Associates, a donor-funded archaeology group Lehner founded to explore the lost city site.

"You have a barracks, which is tightly controlled with streets and an enclosure wall," she said. "And there in the shape of the houses and the artifacts we find, it tells one story and that's basically of workers, young men, presumably no women or children at this point: a rotating labor force."

Near the barracks, Tavares said, a village grew with smaller houses, twisting streets and a less regimented lifestyle, perhaps with more women and children. The people who lived there appeared to be providing for themselves on a family scale, she said.

And then there is the nearby town where officials lived.

"There you have a lot of evidence of administration, of sealings of documents that came in," she said. "There are very large houses with beautiful painted plaster on the walls and the finds there are quite different: stone vessels, more delicate finds."

The team's sealing expert, John Nolan, painstakingly reassembled the imprinted shards of clay seals that scribes placed on bags, boxes, jars and doors, Lehner said.

"The titles on the sealings are some of the highest scribal titles in the land," Lehner said. "So we have, for example, 'Overseer of the King's Writing Case,' 'Overseer of the Scribes of Royal Tutors,' who tutor the noble children and royal children."

The workers left at the end of the three generations of construction it took to build the pyramids of Khufu, Khafre and Menkaure.

From their excavations, they can see that the barracks site crumbled to ankle or waist height and then the desert blew in and covered it in nearly 20 feet of sand.

The next steps for studying the lost city will take place mostly in the lab, Tavares said.

"After 20 years of mapping and excavation, what we do need to do is interpret and consolidate the information and publish," she said.

Lehner said he'd like to keep digging and leave the lab work to Tavares. But he's also interested in reconstructing some of the buildings they've uncovered to get a practical view of how they might have been used.

**Please visit the site:**

[http://www.columbusdispatch.com/live/content/science/stories/2009/06/28/sci\\_Egyptologist.ART\\_ART\\_06-28-09\\_G3\\_MNE9H7A.html?sid=101](http://www.columbusdispatch.com/live/content/science/stories/2009/06/28/sci_Egyptologist.ART_ART_06-28-09_G3_MNE9H7A.html?sid=101)

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## **FORBES.COM, ON THE BLOCK, 1,500- YEAR-OLD HIDDEN RECORD OF CHRIST'S WORDS, SUSAN ADAMS**

Sotheby's might want to send a bidding paddle to Da Vinci Code author Dan Brown. In its July 7 London manuscripts sale, the auction house is offering a 1,500-year-old biblical document that includes layers of text and meaning--in three languages.

Known as the Codex Climaci Rescriptus, the piece was written over the span of three centuries and stowed in a sacred monastery until landing in the hands of a pair of British twins by way of local Egyptian dealers. Now an English college is cannibalizing its library and cashing out, to pay for some building renovations. The ancient manuscript could sell for close to \$1 million, according to Sotheby's estimate.

The codex (Latin for "book") dates to the sixth century, when Christian Palestinian scribes wrote down the words of Christ in Aramaic, the ancient language that is believed to have been close to the dialect spoken by the messiah himself. It includes the despairing plea Jesus was said to have uttered on the cross: "Eli Eli, lema sabachthani [My God, My God, why have you forsaken me?]"

The sixth-century text includes chunks of the Old and New Testaments in both Aramaic and Greek. Each of the 137 leaves on auction is vellum made of sheepskin. "It feels like stiff leather," says Sotheby's medieval manuscript specialist Timothy Bolton.

But there are several added layers of intrigue to the manuscript. Apparently the sixth-century scribes who wrote it were living in what was then Judea, somewhere in present-day Israel. The document was taken to the Sinai desert in Egypt and stowed away for 300 years at a monastery called St. Catherine's, at the foot of the mountain where Moses is said to have received the Ten Commandments. It's not clear why the codex was transported there, though Bolton speculates that it was brought by Christian refugees fleeing Muslim persecution.

Then in the ninth century, a new set of scribes dug through St. Catherine's looking for parchment, which was very expensive in those days. They pulled pages from eight different books--six in Aramaic and two in Greek--and did their best to erase the original writing. They then turned the pages upside down and wrote over the ancient text in jet-black ink. The newer text, in Syriac, is a copy of instructions on how to run a monastery, originally written by a sixth-century monk named John Climacus.

"It was like using yesterday's newspaper to wrap up your fish and chips," says Bolton.

The resulting palimpsest looks like a pirate's cipher for buried treasure, written in several mysterious scripts. The Aramaic writing, in a pale, faded brown, appears loose and fluid, with the odd curlicue swirling outside the margin. The black Syriac is careful, tight and slanting. It's not exactly a key to a puzzle written in code, but it sure looks like one.

The codex's final, dramatic chapter sounds like the plot for a Judi Dench-Maggie Smith movie. Agnes Lewis and Margaret Gibson, twin sisters who were biblical scholars in England, made a series of expeditions to Cairo in search of lost religious manuscripts. In 1892, the sisters got a tip from an informant that some spectacular manuscript leaves could be acquired from local dealers. The twins bought as many leaves of the codex as they could, bringing them back to England and bequeathing them to Westminster College in Cambridge on their deaths in the 1920s.

But that raises another mysterious link in the codex's story: How did the Cairo dealers get their hands on the document? The monastery library, second in size only to the Vatican, dates back to the sixth century and houses a huge collection of early manuscripts. Bolton says no one knows whether the leaves were looted from St. Catherine's.

If Dan Brown isn't interested, who might buy the ancient text?

"We'd love to see this go to an institution," says Bolton. But what institution can scrape up a million bucks in the midst of a worldwide economic crisis?

"In our last manuscript sale, we were selling a 14th-century manuscript about Marco Polo," says Bolton. "We had estimated it at £200,000 to £300,000; people said we were mad." Lehman Brothers had failed three months before the December 2008 sale. "It made £800,000 [\$1.3 million]," says Bolton, paid by a European dealer.

Bolton says that codices of more than a few leaves dating back to the sixth century or earlier are incredibly rare. The most famous, a fourth-century Greek Bible, known as the Codex Sinaiticus, was also housed at St. Catherine's monastery, and is now spread between three locations, including the British Museum.

Nothing like the Codex Climaci has ever come on the market. Says Bolton, "This is a once-in-a-lifetime chance."

**Please visit the site: <http://www.forbes.com/2009/06/26/ancient-bible-auction-lifestyle-collecting-bible-codex.html>**

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