



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

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Θ. Βάκουλης (μέλος),  
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# Πληροφοριακό Δελτίο της Ελληνικής Αρχαιομετρικής Εταιρείας

**- Απρίλιος 2009 -**

# Newsletter of the Hellenic Society of Archaeometry

**- April 2009 -**

**Nr. 97**

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**ΣΥΝΕΔΡΙΑ - CONFERENCES/WORKSHOPS**

**11<sup>TH</sup> INTERNATIONAL  
PALEOLIMNOLOGY SYMPOSIUM, JUNE  
23-26, 2009, JALISCO, MEXICO**

Dear colleagues,

We would like to draw your attention to the session on age-modelling at the upcoming 11<sup>th</sup> International Paleolimnology Symposium, June 23-26, 2009 (Jalisco, Mexico).

**Symposium web site:** <http://www.geofisica.unam.mx/paleolimnologia>

Special session 01. Age-depth modeling

Reliable chronologies are vital for most paleolimnological studies.

However, uncertainties arise from many sources, including i) errors in lead, radiocarbon, and other dates, ii) lack of material or funds causing limited amounts of dates, and iii) age-model assumptions (e.g., linear interpolation between dated levels, spline regression, hiatuses).

Here we will discuss recent advances in age-depth modeling of lakes, e.g., high-resolution dating studies, Bayesian techniques, glacial calibrations, and multiple core comparisons.

Conveners:

-Maarten Blaauw ([maarten.blaauw@qub.ac.uk](mailto:maarten.blaauw@qub.ac.uk)): School of Geography, Archaeology and Palaeoecology, Queen's University, Belfast, United Kingdom.

-Andres Christen ([jac@cimat.mx](mailto:jac@cimat.mx)): Centro de Investigacion en Matematicas (CIMAT), Guanajuato, Mexico.

Your sincerely,

Andres and Maarten

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Dr. Maarten Blaauw

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# **"CONSERVATION AND THE EASTERN MEDITERRANEAN", IIC CONGRESS** **2010, 20-24 SEPTEMBER**

## **CALL FOR PAPERS**

The lands and the islands of the Eastern Mediterranean, from the Balkans through Turkey and the Levant to Egypt, have been home to many of the world's most important and most ancient civilisations. The material evidence of these cultures and traditions is everywhere: in archaeological sites, in museums and in buildings. Today this region presents a vivid and dynamic cultural mosaic as the museums, palaces, sacred places, libraries and archives, cultural centres, sites, monuments and living communities continue to add to the rich and varied landscape. From ancient sites to contemporary sculpture; luxury textiles to elaborate manuscripts; painted masterpieces to civic monuments and grand buildings, the Eastern Mediterranean offers insights unique to its heritage. Come and follow the thread from the depth of antiquity to the vibrant cultures of today.

The twenty-third IIC Congress will take place in the spectacular and historic city of Istanbul, the European Cultural Capital for 2010. In conjunction with the Sakip Sabanci Museum, the many Congress events will focus on the conservation of moveable and immovable heritage in or from the Eastern Mediterranean. This will include material held in collections around the world: the care and conservation of artifacts, of sites, and the preservation of extraordinary architecture, reflecting the influences that have made the region one of the world's richest centres of heritage. The conference will bring together the international professional community to present and exchange ideas, to debate conservation practices and cutting edge research, to consider exciting new developments and thought provoking challenges, and to make new connections between this region and all corners of the world.

The Congress will take place on 20-24 September 2010 and will include four days of papers and a day of excursions in and around Istanbul. It is also hoped to arrange excursions during the weekend after the Congress. The languages of the Congress will be English and Turkish, with simultaneous translation. The preprints will be published in English with abstracts in Turkish.

### **Call for Papers**

We now invite the submission of proposals for papers at this event. Papers presented at an IIC Congress and published in the preprints undergo a rigorous peer review process. To this end, IIC Council appoints a Technical Committee of international experts who will make selections from the proposals received and will then invite draft papers. The drafts will be reviewed and the content of the programme will be determined. Final contributions will be edited for publication by the Editorial Committee, chaired by David Saunders.

IIC encourages you to submit your proposal for a paper early via the web at:  
[URL:http://www.iiconservation.org/conferences/istanbul2010/send\\_abstract.php](http://www.iiconservation.org/conferences/istanbul2010/send_abstract.php)

\*\*\*\*\*

Vasilike Argyropoulos  
Professor of Metals Conservation  
Dept. of Conservation of Antiquities & Works of Art  
T.E.I. of Athens, Greece

\*\*\*\*\*



**10<sup>TH</sup> ANNIVERSARY EUROPEAN  
MEETING ON ANCIENT CERAMICS  
(EMAC), BRITISH MUSEUM, LONDON,  
10-13 SEPTEMBER, 2009**

NOTE DEADLINE FOR ABSTRACT SUBMISSION: 31<sup>ST</sup> MARCH 2009

The UCL Institute of Archaeology and the British Museum are proud to organise the tenth anniversary European Meeting on Ancient Ceramics (EMAC), to be held at the British Museum in London from the 10<sup>th</sup> to the 13<sup>th</sup> of September, 2009.

We are committed to make this EMAC especially inclusive, therefore we also solicit contributions from non-European countries, and on non-European ceramics. International keynote speakers include Ian Freestone, Clive Orton, Hector Neff, Venetia Porter and Prudence Rice.

The main focus of EMAC is the scientific study and archaeological interpretation of ancient ceramics. Bringing together established scholars and young researchers from a wide range of academic backgrounds, including ceramic petrologists, chemists, material scientists, geologists, archaeologists and art historians, EMAC stimulates an international and cross-faculty exchange of ideas and approaches.

London's EMAC '09, coinciding with Wedgwood's 250<sup>th</sup> anniversary, will have a special themed session "From Craft to Science", to promote and discuss the study of ceramics produced in the wake of the Industrial Revolution. The following themes will be covered as well: Technology and provenance, Methodological developments, Dating, Technical ceramics, Building materials, Islamic ceramics, and Residue analysis.

All delegates will receive a copy of the volume that will be published with peer-reviewed conference papers.

**For further information, registration and submission of abstracts please visit the following website: [www.ucl.ac.uk/EMAC09](http://www.ucl.ac.uk/EMAC09)**

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# **"CONSERVATION AND THE EASTERN MEDITERRANEAN" IIC CONGRESS, 20- 24 SEPTEMBER 2010**

## **CALL FOR PAPERS**

The lands and the islands of the Eastern Mediterranean, from the Balkans through Turkey and the Levant to Egypt, have been home to many of the world's most important and most ancient civilisations. The material evidence of these cultures and traditions is everywhere: in archaeological sites, in museums and in buildings. Today this region presents a vivid and dynamic cultural mosaic as the museums, palaces, sacred places, libraries and archives, cultural centres, sites, monuments and living communities continue to add to the rich and varied landscape. From ancient sites to contemporary sculpture; luxury textiles to elaborate manuscripts; painted masterpieces to civic monuments and grand buildings, the Eastern Mediterranean offers insights unique to its heritage. Come and follow the thread from the depth of antiquity to the vibrant cultures of today.

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[URL:http://www.iiconservation.org/conferences/istanbul2010/send\\_abstract.php](http://www.iiconservation.org/conferences/istanbul2010/send_abstract.php)

Vasilike Argyropoulos  
Professor of Metals Conservation  
Dept. of Conservation of Antiquities & Works of Art  
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# **15<sup>TH</sup> EAA ANNUAL MEETING, RIVA DEL GARDA, ITALY, 15-20 SEPTEMBER, 2009**

## **SESSION TITLE: BURIAL IN PREHISTORY: OLD ISSUES AND NEW TECHNIQUES PRELIMINAR**

### **CALL FOR PAPERS**

**Deadline for paper proposals: 15th April, 2009**

Session organizers:

Dr. Krum Bacvarov (Bulgarian Academy of Sciences: <[krum.bacvarov@gmail.com](mailto:krum.bacvarov@gmail.com)>)

Dr. Gassia Artin (Université Lyon 2: <[gassiart@hotmail.com](mailto:gassiart@hotmail.com)>)

Dear Colleague,

The 15th EAA Annual Meeting will be held in Riva del Garda, Italy, 15-20 September, 2009. We are releasing this Preliminary Call for Papers now, so as to give potential contributors more lead time to plan their schedules as well as to receive relevant feedback.

Keywords: prehistoric burial, social archaeology, bioarchaeology, analytical techniques, Europe, the Near East.

Abstract: Burial has been considered in prehistoric archaeology as often as the everyday contexts and this is logical since death has always been a critical element of human life. Throughout the history of archaeology as a discipline, scientists have regularly explored various aspects of this field, from descriptions of excavated remains to assessments of archaeological bones to reconstructions of complicated mortuary practices and ritual behavior. Research on burial archaeology gradually intensified and set off in separate directions, especially in the last few decades, forming well defined subfields and schools, depending on national scientific traditions as well as on local/regional and chronological variations. Human biology and chemistry contributed greatly to the Archaeology of Death yielding the new discipline of bioarchaeology and brand new and promising techniques of assessing human bones, ranging from stable isotopic studies to ancient DNA analysis.

Summarizing the background of Archaeology of Death, one can clearly distinguish three major directions of current research interest:

- Social archaeology of mortuary remains including interpretations and reconstructions of socio-ritual patterns;
- Bioarchaeological assessments including 'traditional' ageing and sexing as well as innovative modeling of social and ritual behavior;

- Stable isotopic studies, AMS 14C dating, ancient DNA analysis yielding dietary, chronological, and genetic evidence, respectively.

Another critical trend to be considered is certain regionalism in prehistoric research on mortuary practices that has produced separate schools in major European countries as well as in the USA and Russia.

Although globalization and integration processes affect prehistoric archaeology too, it is obvious that there are huge gaps, especially in its theoretical aspects, that still need to be bridged by joint efforts.

Therefore, we propose the session on Burial in Prehistory: Old Issues and New Techniques. Its goal is to bring together mainstream archaeologists as well as bioarchaeologists and geneticists, from different research centers/schools who are currently working on aspects of prehistoric mortuary practices in the research directions listed above, to discuss their respective fields of expertise and to find similarities and distinctions both in their subjects and their approaches, to share their respective views on how these different approaches and techniques are to be combined and used together to construct new interpretative frameworks.

The following major topics are suggested for consideration:

Archaeology of Burial; Bioarchaeology: Yesterday, Today and Tomorrow; Assessment of Archaeological Human Bones; Burials in Various Prehistoric Settings: What Is Similar, What Is Different; Assessing Death, Interpreting Life; Personal Life Cycles and Socio-Cultural Identities; and Exploring Similar Contexts But Speaking Different Languages.

The space and time framework of the session covers Europe and the Near East, from the Paleolithic to the Bronze Age. This will facilitate both the comprehensiveness and the conciseness of discussions focusing on more or less similar and contemporaneous contexts in different social and cultural settings, and on the models and techniques used to interpret them.

Deadline for paper proposals: 15th April, 2009

Looking forward to hearing from you,  
Krum and Gassia

Via Andrew Garrard  
Email: [andrew.garrard@btopenworld.com](mailto:andrew.garrard@btopenworld.com)

**CSPS INTERNATIONAL CONFERENCE**  
**CSPS ΔΙΕΘΝΕΣ ΣΥΝΕΔΡΙΟ**

**HONOURING THE DEAD IN THE**  
**PELOPONNESE**  
**ΤΙΜΩΝΤΑΣ ΤΟΥΣ ΝΕΚΡΟΥΣ ΣΤΗΝ**  
**ΠΕΛΟΠΟΝΝΗΣΟ**

**SPARTI, 23-25 APRIL 2009**  
**ΣΠΑΡΤΗ, 23-25 ΑΠΡΙΛΙΟΥ 2009**

**ΠΡΟΓΡΑΜΜΑ - PROGRAMME**

**Πέμπτη 23 Απριλίου 2009 – Thursday 23 April 2009**

- 17.00-18.30** Εγγραφή στη Δημόσια Κεντρική Βιβλιοθήκη του Δήμου Σπάρτης  
Registration at the Public Central Library of Sparta.
- 18.30** Τελετή έναρξης Συνεδρίου - Προσφωνήσεις  
Opening Ceremony- Addresses
- 19.00** Ceremony of the Nomination of Professor W.G. Cavanagh as Honorary Citizen of Sparta  
Τελετή Αναγόρευσης του καθηγητή W.G. Cavanagh σε Επίτιμο Δημότη Σπαρτιατών  
Award of honorary accolade to Professor Dikaios Vayiakkos in recognition of his lifetime's contribution to Laconian studies  
Τελετή απόδοσης τιμητικής διάκρισης στον καθηγητή Δικαίο Βαγιακάκο
- 21.00** Δεξίωση/ Reception

**Παρασκευή 24 Απριλίου 2009 – Friday 24 April 2009**

**Συνεδρία 1Α: Θάνατος και Κοινωνική Υπόσταση I**  
**Session 1A: Death and Social Persona I**

**Αίθουσα/Venue: Sparta Library Building/Κτήριο Βιβλιοθήκης Σπάρτης**

**Προεδρείο/Chair: James Wright & Chrysanthi Gallou**

- 08.30 *Michael Boyd*, The role of mortuary practices in the construction of Aegean Late Bronze Age social order and identity
- 08.50 *Emily Banou and Louise Hitchcock*, 'The Lord of Vapheio': The social identity of the dead and its implications for Laconia in the LH II-III A period
- 09.10 *Rachel Fox*, Vessels and the body in Early Mycenaean funerary contexts
- 09.30 *Konstantinos Kalogeropoulos*, The social and religious significance of the 'palatial jars' as grave offerings

### Συνεδρία 2Α: Ήρωες και Λατρεία I

#### Session 2A: Heroes and Cult I

Αίθουσα/Venue: University of Peloponnese Building/ Κτήριο Πανεπιστημίου Πελοποννήσου

Προεδρείο /Chair: Carla Antonaccio & Stephen Miller

- 08.30 *Ελένη Ψυχογιού*, Τιμώντας τους 'μεταφυσικούς' νεκρούς: Αρχαίες και σύγχρονες θρησκευτικές τελετουργίες αναγέννησης με αφετηρία παράσταση σε μυκηναϊκό κρατήρα
- 08.50 *Diana Burton*, Gods, heroes and the underworld: Cult and iconography
- 09.10 *Χρήστος Πιτερός*, Η ηρωική λατρεία των Διοσκούρων στο Άργος και τα δόκανα
- 09.30 *Ελένη Μαράντου*, Λατρεία των προγόνων και ηρωολατρεία στην κεντρική και νότια Πελοπόννησο: Η μαρτυρία του Πausanias

9.50-10.10 Διάλειμμα (Καφές-Τσάι)  
Break (Coffee-Tea)

### Συνεδρία 1B: Θάνατος και Κοινωνική Υπόσταση II

#### Session 1B: Death and Social Persona II

Αίθουσα/Venue: Sparta Library Building/Κτήριο Βιβλιοθήκης Σπάρτης

Προεδρείο/Chair: James Wright & Chrysanthi Gallou

- 10.10 *Iro Mathioudaki*, Honouring the dead with polychrome pots: The case of 'mainland polychrome pottery' in Peloponnesian funerary contexts- An interpretative approach
- 10.30 *Ολυμπία Βικάτου*, «ὁ δὲ θρήνος οὐ περιγράφεται χρόνω»: Θρήνος-θρηνοδία και ταφική τελετή όπως απεικονίζονται στα πρόσφατα ευρήματα από τα Μυκηναϊκά νεκροταφεία της περιφέρειας Ηλείας
- 10.50 *Ιωάννης Μόσχος*, Ο κοινωνικός χαρακτήρας και η σημασία των τυπικών θανάτου κατά την ΥΕ ΙΙΙΓ περίοδο στη βορειοδυτική Πελοπόννησο
- 11.10 *Marionna Louka*, Archaic jewellery from Greece and its connections with the Balkans

### Συνεδρία 2B: Ήρωες και Λατρεία II

#### Session 2B: Heroes and Cult II

Αίθουσα/Venue: University of Peloponnese Building/ Κτήριο Πανεπιστημίου Πελοποννήσου

Προεδρείο/Chair: Carla Antonaccio & Stephen Miller

- 10.10 *Χρήστος Ματζάνας*, Ανασκαφή νεκροταφείου με αρχαϊκές και ρωμαϊκές ταφές στην παραλία Σαβαλίων, Ν. Ηλείας
- 10.30 *Maria Pipili*, Honouring the dead on some Laconian black-figured cups? Reassessing the evidence
- 10.50 *Florentia Fragkopoulou*, Sanctuary dedications and the treatment of the dead in Laconia (800-600 BC): The case of Artemis Orthia
- 11.10 *Ellen Millender*, The politics of heroization in classical Sparta

11.30-11.50 Διάλειμμα (Καφές-Τσάι)  
Break (Coffee-Tea)

**Συνεδρία 1C: Θάνατος και Κοινωνική Υπόσταση III**

**Session 1C: Death and Social Persona III**

**Αίθουσα/Venue: Sparta Library Building/Κτήριο Βιβλιοθήκης Σπάρτης**

**Προεδρείο/Chair: James Wright & Chrysanthi Gallou**

- 11.50 *Λήδα Μόσχου*, Ένας εμπορικός θάνατος: Σχόλιο σε ενεπίγραφα επιτύμβια μνημεία της Λακωνικής Μάνης, 2ος αι. π.Χ. – 4ος αι. μ.Χ.
- 12.10 *Christos Stavrakos*, Byzantine aristocracy in Sparta of the Middle Byzantine period
- 12.30 *Πέπη Γαβαλά*, Τα μνημεία των κοιμητηρίων της Λακωνίας
- 12.50 Συζήτηση – Discussion

**Συνεδρία 2C: Ήρωες και Λατρεία III**

**Session 2C: Heroes and Cult III**

**Αίθουσα/Venue: University of Peloponnese Building/ Κτήριο Πανεπιστημίου Πελοποννήσου**

**Προεδρείο /Chair: Carla Antonaccio & Stephen Miller**

- 11.50 *Michele Lucchesi*, Heroisation and ruler cults in Sparta between Thucydides and Plutarch
- 12.10 *Katherine Rassia*, The cult of Homeric and local heroes and its contribution to the formation of Spartan identity
- 12.30 *Nicolette Pavlides*, The veneration of local heroes: Burial rediscovery and identity in Sparta
- 12.50 Συζήτηση – Discussion

**14.00-17.0 Διάλειμμα για μεσημεριανό γεύμα  
Lunch Break**

**Συνεδρία 3: Ταφικές Τελετές και η Ταυτότητα της Κοινότητας**

**Session 3: Death Rites and Communal Identity**

**Αίθουσα/Venue: Sparta Library Building/Κτήριο Βιβλιοθήκης Σπάρτης**

**Προεδρείο /Chair: Georgia Kokkorou-Alevras & James Roy**

- 17.00 *Jean-Marc Luce*, Iron Age burial customs in the Peloponnese and their place in the funerary geography of the Greek world
- 17.20 *Ioannis Georganas*, Stuck in the Past: Early Iron Age tholos tombs in Messenia
- 17.40 *Άλκηστις Παπαδημητρίου*, Ταφικά έθιμα της πρώιμης εποχής του Σιδήρου στην Αργολίδα: Κοινωνικά και πολιτικά 'υπονοούμενα'

**Συνεδρία 4: Ενθυμούμενοι τους νεκρούς στη Βυζαντινή και σύγχρονη εποχή**

**Session 4: Remembering the Dead in Byzantine and modern times**

**Αίθουσα/Venue: University of Peloponnese Building/ Κτήριο Πανεπιστημίου Πελοποννήσου**

**Προεδρείο /Chair: Leda Moschou & Mercourios Georgiadis**

- 17.00 *Αιμιλία Μπακούρου*, Ταφές σε Μεσοβυζαντινό τρίκογχο της Σπάρτης
- 17.20 *Αικατερίνη Καμηλάκη-Πολυμέρου*, Οι νεκροί της ασφάλτου. Μνημεία και μνήμες



17.40 Γιάννης Σαΐτας, Κοιμητήρια και οικισμοί στη Μάνη. Μέσοι και Νεώτεροι Χρόνοι. Συμβολή Δεύτερη.

**18.00-18.20 Διάλειμμα (Καφές-Τσάι)  
Break (Coffee-Tea)**

#### **Συνεδρία 5: Γενεά και Πρόγονοι**

#### **Session 5: Ancestry and the Ancestors**

**Αίθουσα/Venue: Sparta Library Building/Κτήριο Βιβλιοθήκης Σπάρτης**

**Προεδρείο /Chair: Georgia Kokkorou-Alevras & James Roy**

18.20 *Carla Antonaccio*, Making Messenian heroes and ancestors

18.40 *Terry Brown*, Echoes of ancestry in ancient DNA from the Peloponnesian Bronze Age

19.00 *Oliver Gengler*, Leonidas and the Heroes of Thermopylae: Memory of the dead and identity in Roman Sparta

19.20 *Theodora Zambaki*, The burial customs for Alexander the Great in Arabic historiography and the Alexander Romance

19.40 Συζήτηση – Discussion

#### **Συνεδρία 6: Θρήνος και Μοιρολόι**

#### **Session 6: Mourning and Lament**

**Αίθουσα/Venue: University of Peloponnese Building/ Κτήριο Πανεπιστημίου Πελοποννήσου**

**Προεδρείο /Chair: Leda Moschou & Mercourios Georgiadis**

18.20 *Nadia Seremetakis*, Antiphony, ritual and the construction of truth

18.40 *Eleni Gasti*, The poetics of lament in Aescylus' Oresteia

19.00 *Θεόδωρος Κατσουλάκος*, Η σχέση της μοιρολογίστρας με το νεκρό ως πηγή έμπνευσης

19.20 *Δημήτριος Κατσουλάκος*, Το μοιρολόι της νότιας κοίλης Λακεδαίμονος και οι ιστορικές περιπέτειες της χώρας

19.40 Συζήτηση – Discussion

#### **Σάββατο 25 Απριλίου 2009 – Saturday 25 April 2009**

#### **Συνεδρία 7Α: Μνημεία και Μνήμη I**

#### **Session 7A: Memorials and Memory I**

**Αίθουσα/Venue: Sparta Library Building/Κτήριο Βιβλιοθήκης Σπάρτης**

**Προεδρείο /Chair: Bill Cavanagh & Katie Demakopoulou**

08.30 *Tracey Cullen and Anastasia Papathanasiou*, Funerary markings of memory: Mortuary ritual at Neolithic Franchthi Cave and Alepotrypa Cave

08.50 *Chrysanthi Gallou*, The burial tradition in Early Mycenaean southern Peloponnese

09.10 *Nikolas Papadimitriou*, 'Passing away' or 'passing through'?: Changing funerary attitudes in the Peloponnese at the transition from the Middle to the Late Bronze Age



09.30 *Λένα Παπάζογλου-Μανιουδάκη*, Ατιμάζοντας τους Νεκρούς. Η λεηλασία των θολωτών τάφων στην πρώιμη ανακτορική περίοδο και η περίπτωση του θολωτού τάφου στο λόφο της Μυγδαλιάς (Πετρωτό) στην Αχαΐα

### **Συνεδρία 8Α: Οι Επιφανείς Νεκροί**

#### **Session 8A: The Glorious Dead**

**Αίθουσα/Venue: University of Peloponnese Building/ Κτήριο Πανεπιστημίου Πελοποννήσου**

**Προεδρείο /Chair: Steve Hodkinson & Metaxia Papapostolou**

08.30 *Θανάσης Παπαδόπουλος και Λίτσα Παπαδοπούλου*, Θάνατος, εξουσία και αναταραχές στην Υστερομυκηναϊκή κοινωνία της Πελοποννήσου: Η μαρτυρία των τάφων πολεμιστών

08.50 *Annalisa Paradiso*, Did Herodotus ever see the list of the Three Hundred?

09.10 *Paul Cartledge*, Death in Sparta? Revisiting Plut. Lyc. 27

09.30 *Nicholas Sekunda*, IG. V.1 1124. The dead of Geronthrai fallen at Mantinea

### **09.50-10.10 Διάλειμμα (Καφές-Τσάι) Break (Coffee-Tea)**

### **Συνεδρία 7B: Μνημεία και Μνήμη II**

#### **Session 7B: Memorials and Memory II**

**Αίθουσα/Venue: Sparta Library Building/Κτήριο Βιβλιοθήκης Σπάρτης**

**Προεδρείο/Chair: Bill Cavanagh & Katie Demakourou**

10.10 *Ελένη Κωνσταντινίδη-Συβρίδη και Κωνσταντίνος Πασχαλίδης*, Τιμώντας τους νεκρούς στα παρασκήνια: Η περίπτωση του θαλαμωτού τάφου νότια του Κύκλου Β των Μυκηνών

10.30 *Ελένη Παλαιολόγου*, Ο Τάφος του Αιγίσθου στις Μυκήνες: Επανεξέταση

10.50 *Νάγια Πολυχρονάκου-Σγουρίτσα*, Παρατηρήσεις στη χρήση ασβεστοκονιάματος στην πρόσβαση και την είσοδο θολωτών τάφων στις Μυκήνες: Η αρχή στην ταφική διακόσμηση

11.10 *Σωτήρης Λαμπρόπουλος, Παναγιώτης Μουντζουρίδης και Κώστας Νικολέντζος*, Υβριδικά ταφικά μνημεία της Ύστερης Εποχής του Χαλκού σε δύο νέες θέσεις του νομού Ηλείας (Στρέφι και Αρβανίτη)

### **Συνεδρία 8B: Οι Επιφανείς Νεκροί**

#### **Session 8B: The Glorious Dead**

**Αίθουσα/Venue: University of Peloponnese Building/ Κτήριο Πανεπιστημίου Πελοποννήσου**

**Προεδρείο /Chair: Steve Hodkinson & Metaxia Papapostolou**

10.10 *George Steiris*, Exemplary deaths in Peloponnese

10.30 *Αθανάσιος Φωτόπουλος*, Ο θάνατος στην Πελοπόννησο κατά την περίοδο 1941-1949

10.50 *Αναστασία Παναγιωτοπούλου*, Μνημεία πεσόντων στην Πελοπόννησο

11.10 *Γεωργία Κακούρου-Χρόνη*, Νικηφόρος Βρεττάκος: «*Ας φεύγουμε ανεβαίνοντας ...*»

### **11.30-11.50 Διάλειμμα (Καφές-Τσάι)**

**Break (Coffee-Tea)**

**Συνεδρία 7Γ: Μνημεία και Μνήμη III**

**Session 7C: Memorials and Memory III**

**Αίθουσα/Venue: Sparta Library Building/Κτήριο Βιβλιοθήκης Σπάρτης**

**Προεδρείο /Chair: Bill Cavanagh & Katie Demakopoulou**

- 11.50 *Georgia Kokkorou-Alevras*, Funerary statuary of the Archaic period in the Peloponnese  
12.10 *Katerina Charatzopoulou*, Monumental tomb architecture in the Hellenistic Peloponnese: Forms and functions  
12.30 *Άννα-Βασιλική Καραπαναγιώτου και Σωκράτης Κουρσούμης*, Ανθρωπόμορφη στήλη από το Λεβίδι Αρκαδίας: Τυπολογική και ερμηνευτική προσέγγιση  
12.50 *James Roy*, Anyte of Tegea and the other dead  
13.10 Συζήτηση – Discussion

**Συνεδρία 9: Αποδοχή και Αποκλεισμός**

**Session 9: Inclusion and Exclusion**

**Αίθουσα/Venue: University of Peloponnese Building/ Κτήριο Πανεπιστημίου Πελοποννήσου**

**Προεδρείο /Chair: Elisavet Spathari & Anna Banaka**

- 11.50 *Petros Themelis*, Messene. The urban heroa  
12.10 *Agiati Benardou*, Burial practices and family plots in the classical Corinthia: Restrictions and considerations of interpretation  
12.30 *Αγγελική Κόσσυβα*, Οι αφανείς νεκροί της Δέλπριζας Κρανιδίου  
12.50 *Erika Weiberg*, The invisible dead. The case of the Argolid and Corinthia during the Early Bronze Age  
13.10 Συζήτηση – Discussion

**14.00-16.00 Διάλειμμα για μεσημεριανό γεύμα – Lunch Break**

**16.00-17.00 ΠΑΡΟΥΣΙΑΣΕΙΣ POSTER (Κτήριο Βιβλιοθήκης Σπάρτης- 1<sup>ος</sup> όροφος)**

**Προβολή ντοκιμαντέρ του Τ. Βενετσανάκου με θέμα ‘Σπηλαιοβάραθρο Καιάδας – Μύθος και Πραγματικότητα’**

**POSTER SESSIONS (Sparta Library Building-Upper Floor)**

**Showing of the documentary by T. Venetsanakos on the theme ‘The Kaiadas Chasm– Myth and Reality’**

**Συνεδρία 10: Πολιτική και Ταφή**

**Session 10: Politics and Burial**

**Αίθουσα/Venue: Sparta Library Building/Κτήριο Βιβλιοθήκης Σπάρτης**

**Προεδρείο /Chair: Michalis Petropoulos & Anastasia Panagiotopoulou**

- 17.00 *James Wright*, Family or State: Memorials of tension  
17.20 *Angeliki Petropoulou*, The Spartan royal funeral from a comparative Perspective

17.40 Όλγα Ψυχογιού, Πολιτικό μήνυμα από τον τάφο του Φορωνέος στο Άργος

### **Συνεδρία 11: Βυζαντινή Εσχατολογία**

#### **Session 11: Byzantine Eschatology**

**Αίθουσα/Venue: University of Peloponnese Building/ Κτήριο Πανεπιστημίου Πελοποννήσου**

**Προεδρείο /Chair: Nadia Seremetakis & Aimilia Bakourou**

17.00 *Δανάη Χαραλάμπους*, Η παράσταση της «Είς Άδου Καθόδου» σε μνημεία του 17ου αι. στη Λακωνία

17.20 *Ευαγγελία Πάντου*, Νοήματα πίστης για τη ζωή και το θάνατο σε ξυλόγλυπτα τέμπλα του ιερέα Ιωάννη Σφιρίκα από τα Χρύσαφα Λακωνίας

17.40 *Ιουλία Παπαγεωργίου*, Η τοιχογραφία του Ελκόμενου στο ναό της Ζωοδόχου Πηγής στο Κάστρο Γερακίου Λακωνίας: Ένας εικαστικός συμβολισμός του Σταυρικού Θανάτου του Χριστού

**18.00- 18.20 Διάλειμμα (Καφές-Τσάι)  
Break (Coffee-Tea)**

### **Συνεδρία 12: Θάνατος και Γένος**

#### **Session 12: Death and Gender**

**Αίθουσα/Venue: Sparta Library Building/Κτήριο Βιβλιοθήκης Σπάρτης**

**Προεδρείο /Chair: Michalis Petropoulos & Anastasia Panagiotopoulou**

18.20 *Judith Lebegyev*, The emotional aspects of Mycenaean child burials

18.40 *Jesús Cepeda-Ruiz*, Spartan maidens in archaic and classical periods: Physical training for future Spartan mothers and the ritual death of the maiden before marriage

19.00 *Μεταξία Παπαποστόλου*, «Ο τιμημένος θάνατος»: Οι τιμές στον νεκρό ήρωα της μάχης και στη γυναίκα-λεχώνα στην αρχαία Σπάρτη

19.20 *Άννα Μπανάκα*, Παιδικές ταφές ιστορικών χρόνων: Ευρήματα από τις ανασκαφές του Άργους

19.40 Συζήτηση – Discussion

### **Συνεδρία 13: Φιλοσοφία και Θάνατος**

#### **Session 13: Philosophy and Death**

**Αίθουσα/Venue: University of Peloponnese Building/ Κτήριο Πανεπιστημίου Πελοποννήσου**

**Προεδρείο /Chair: Nadia Seremetakis & Aimilia Bakourou**

18.10 *Dimitris Michalopoulos*, Divine connections, eternal life? Agamemnon, Menelaus and the afterlife

18.30 *George Paraskeviotis*, Agamemnon's death in Seneca

18.50 *Christopher Lillington-Martin*, Prokopios' honouring of the dead in the Peloponnese

19.10 *Παναγιώτης Πανταζάκος*, Ο θάνατος στη φιλοσοφία του Γεωργίου Γεμιστού

19.30 Συζήτηση – Discussion

**20.00 Τελετή Αήξεως Συνεδρίου στο Κτήριο της Δημόσιας Βιβλιοθήκης  
Closing Ceremony at the Sparta Library Building**

**21.00 Δείπνο Συνεδρίου**  
**Conference Dinner**

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

**FIELDWORK OPPORTUNITY NOTICE**

The Lemba Experimental Village is a reconstruction of several different types of prehistoric roundhouses located in the west of the island. A Field School in June-July 2009 will focus on timber roof and mud wall rebuilding, and site management practices. This represents an opportunity for those interested in Mediterranean materials, practices and heritage to gain first-hand experience in experimental archaeology. Applicants are invited to take part for a minimum of 2 weeks. For further information and application form, please see:

[http://www.shca.ed.ac.uk/student/undergraduate/archaeology/fieldwork/lemba\\_field\\_school/index.htm](http://www.shca.ed.ac.uk/student/undergraduate/archaeology/fieldwork/lemba_field_school/index.htm) or contact the School's director, Paul Croft at: [paulcroft@cytanet.com.cy](mailto:paulcroft@cytanet.com.cy)

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# **Η ΥΠΟΤΡΟΦΙΑ ΤΗΣ ΕΛΛΗΝΙΚΗΣ ΕΤΑΙΡΕΙΑΣ ΓΙΑ ΜΕΤΑΠΤΥΧΙΑΚΕΣ ΣΠΟΥΔΕΣ ΑΡΧΙΤΕΚΤΟΝΑ ΜΗΧΑΝΙΚΟΥ ΚΑΙ ΑΡΧΑΙΟΛΟΓΟΥ ΣΤΟ ΠΑΝΕΠΙΣΤΗΜΙΟ YORK ΤΗΣ ΑΓΓΛΙΑΣ 2009-2010**

Η ΕΛΛΗΝΙΚΗ ΕΤΑΙΡΕΙΑ Περιβάλλοντος και Πολιτισμού με χορηγία του 'The John S Fafalios Foundation' προκηρύσσει διαγωνισμό για μία (1) υποτροφία για μεταπτυχιακές σπουδές διάρκειας ενός (1) έτους για το ακαδημαϊκό έτος 2009-2010 στο Centre for Conservation Studies του Πανεπιστημίου York (Αγγλία) σε θέματα αναστήλωσης και αποκατάστασης μνημείων.

Η θέση προκηρύσσεται καταρχήν για Έλληνες, Ελληνοκυπρίους και ελληνικής καταγωγής αρχιτέκτονες μηχανικούς και αρχαιολόγους. Οι υποψήφιοι πρέπει να έχουν άριστη γνώση της αγγλικής γλώσσας και, στην περίπτωση που είναι υπάλληλοι (Δημοσίου, Οργανισμών Τοπικής Αυτοδιοίκησης, ΝΠΔΔ ή ιδιωτικοί), να μπορούν να εξασφαλίσουν άδεια απουσίας ή εκπαιδευτική άδεια ενός πλήρους έτους, η οποία να αρχίζει την 1.9.2009.

Οι ενδιαφερόμενοι πρέπει να υποβάλουν αίτηση στην ΕΛΛΗΝΙΚΗ ΕΤΑΙΡΕΙΑ, όπου θα αναγράφονται τα πλήρη στοιχεία του αιτούντος (διεύθυνση, τηλέφωνο κ.λπ.). Η αίτηση θα συνοδεύεται από συνοπτικό αλλά πλήρες βιογραφικό σημείωμα (σπουδές, ομιλούμενες γλώσσες, προγενέστερη πείρα σε θέματα αναστήλωσης και αποκατάστασης, δημοσιεύματα κ.λπ. με όλα τα σχετικά αποδεικτικά).

Οι υποψήφιοι πρέπει να δηλώσουν απαραιτήτως στην αίτησή τους κατά πόσον έχουν άλλη τυχόν υποτροφία για μεταπτυχιακές σπουδές στο Πανεπιστήμιο York της Αγγλίας για το έτος 2009-2010. Εάν τυχόν έχει χορηγηθεί άλλη υποτροφία στον υποψήφιο, τούτο δεν αποκλείει τη συμμετοχή του στον παρόντα διαγωνισμό. Εάν όμως ο υποψήφιος επιλεγεί για τη χορήγηση της παρούσας υποτροφίας, προϋπόθεση της χορήγησής της είναι η παραίτηση από οποιαδήποτε άλλη παράλληλη υποτροφία.

Οι αιτήσεις μπορούν να υποβληθούν ιδιοχείρως στο γραφείο της ΕΛΛΗΝΙΚΗΣ ΕΤΑΙΡΕΙΑΣ, Τριπόδων 28, 10558 Αθήνα (Πλάκα), καθημερινά, 10.00-17.00, εκτός Σαββάτου και Κυριακής, τηλ. 2103225245, 2103226693, να σταλούν με fax (2103225240) ή να σταλούν ταχυδρομικώς (στην Ελληνική Εταιρεία), το αργότερο μέχρι την Παρασκευή 24 Απριλίου 2009 (Πληροφορίες: 210-3225245 εσ. 3, [sak@ellinikietairia.gr](mailto:sak@ellinikietairia.gr), [www.ellinikietairia.gr](http://www.ellinikietairia.gr))

Οι υποψήφιοι θα πρέπει, έπειτα, να περάσουν γραπτή και προφορική εξέταση στην αγγλική γλώσσα την Πέμπτη 7 Μαΐου 2009, στις 15:00 στα γραφεία της Ελληνικής Εταιρείας. Οι επιτυχόντες θα έχουν προσωπική συνέντευξη με την Εξεταστική Επιτροπή ειδικών καθηγητών και επιστημόνων, τη Δευτέρα 11 Μαΐου 2009, 15:00-17:00. Τα

αποτελέσματα θα ανακοινωθούν την Παρασκευή 15 Μαΐου 2009 στα γραφεία της Ελληνικής Εταιρείας, ώρες 12:00-17:00.

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## **POSTDOCS: ON ANCIENT SCIENCE, IN FRANKFURT**

The History Department of the Faculty of Philosophy and History of the Goethe University, Frankfurt am Main is seeking to appoint a postdoctoral research assistant (wissenschaftlicher Mitarbeiter/wissenschaftliche Mitarbeiterin, BAT IIa) from 01.05.2009 for three years. The position is attached to the professorship „History of science of the pre-modern world“, located within the Cluster of Excellence „Normative Orders“ (<http://www.normativeorders.net/>). The limitation of the contract is a result of the provisions of the Wissenschaftszeitvertragsgesetz in conjunction with the Hessisches Hochschulgesetz.

Responsibilities of the position include collaboration within Research Area 2: The Historicity of Normative Orders (<http://www.normativeorders.net/en/research/areas/research-area-2>), teaching, organisational tasks, support of the research of the professor, and the supervision of students. The postdoctoral research assistant will be given the opportunity both for self-determined research and to obtain further qualifications.

Requirements: Relevant PhD dissertation (Egyptology, Assyriology or History of Science). The applicant should be able to relate their research to the subject of the Cluster of Excellence. Experience in interdisciplinary research and in academic teaching would be conducive.

Applications, including the usual documents, should be sent to:

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Prof. Dr. Annette Warner  
Exzellenzcluster Normative Orders  
Goethe-Universität Frankfurt  
Senckenberganlage 31  
Hauspostfach 5  
60054 Frankfurt am Main  
Germany

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**SCIENTIST / LEIBNIZ LABOR,**  
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The Leibniz Labor for Radiometric Dating and Isotope Research invites applications for a position in **physics, AMS, isotope geochemistry** in the Accelerator Mass Spectrometry (AMS) Group. The position is full-time (38.7 h/week) and available immediately. It will be awarded initially for two years, with a possibility of continuation or tenure. Salary will be commensurate with experience up to TVL 13.

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Candidates should have a PhD in **(nuclear/small accelerator) physics** with a good knowledge of ion optics, vacuum techniques, computer programming, and electronics and, preferably, experience in AMS and its applications. They should be familiar with computers (PC, Windows), i.e. data reduction and analysis, databases, and programming. Knowledge of English and German is preferred. The successful applicant will be part of an internationally-oriented team dealing with all aspects of AMS. A flexible work schedule, including occasional work during weekends, is required.

The Christian Albrecht University is an equal opportunity employer; women and disabled persons are encouraged to apply.

Please send a resume, including a 1-page statement of research interests (in english), a copy of your most important publication(s), names and addresses of 3 references, and other relevant documentation to:

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**Dr. Marie-Josée Nadeau, Leibniz Labor,**  
**Christian Albrecht University,**  
**Max Eyth Str. 11,**  
**24118 Kiel, Germany.**

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For further information contact Dr. Nadeau at (0049)-431-880-7390/7400, email [mnadeau@leibniz.uni-kiel.de](mailto:mnadeau@leibniz.uni-kiel.de); [www.uni-kiel.de/leibniz](http://www.uni-kiel.de/leibniz)

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**TECHNOLOGY ORGANISATION (ANSTO),**  
**SYDNEY, AUSTRALIA**

**2-year term (extendible to 3-years):**

**Salary range: A\$66,451 (plus superannuation)**

A post-doctoral position is available for an experienced and energetic experimental scientist to conduct independent and team-based research in the application of isotopic and cosmogenic analytical methods to study paleo-climate variability with focus on the Southern Hemisphere. Experience in using climate archives based on tree rings, speleothems, corals, lake/ocean sediments, ice or glacial deposits, and with a working knowledge in the role of cosmogenic radionuclides (i.e., C-14, Be-10, Al-26), U-series dating and stable isotopes ( $\delta^{18}\text{O}$  and  $\delta^{13}\text{C}$ ) related to paleo-environmental studies is required. The successful candidate will work in various aspects of paleo-climate variability related, for example, to glacial chronologies and cycles, Antarctic studies, landscape change, atmospheric and ocean circulation, or paleo-hydrology. The Institute's paleoclimate change project is supported within ANSTO and by Australasian universities and he or she will be encouraged to foster their own research directions in the above topics. Analytical work will involve measurements of C-14, Be-10 and Al-26 at our ANTARES and STAR Accelerator Mass Spectrometry Facility, and stable isotope and U-series dating at collaborating universities. A suite of chemistry laboratories for AMS sample preparation is also available. Experience in field excursions, sampling methods, relevant sample preparation techniques is also required. Familiarity with Accelerator Mass Spectrometry techniques is desirable

Further information on the post-doctoral research fellowship can be obtained by contacting Dr David Fink on +61 2 9717 3048 or email [fink@ansto.gov.au](mailto:fink@ansto.gov.au)

Information on how to apply and to view the selection criteria please consult the [application information package](#) on the ANSTO website ([www.ansto.gov.au](http://www.ansto.gov.au)) or contact Megan Lusty on +61 (02) 9717-3094 ([megan.lusty@ansto.gov.au](mailto:megan.lusty@ansto.gov.au)). Applications should be submitted on-line and must address the selection criteria, provide a CV, a brief description of current and proposed research activities, and include the names of at least 3 referees.

**Applications close on Friday May 1<sup>st</sup>, 2009**

\*\*\*\*\*

Dr David Fink

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## **ΑΝΑΚΟΙΝΩΣΕΙΣ - ANNOUNCEMENTS**

### **MEMORY OF THE WORLD**

UNESCO's programme aiming at preservation and dissemination of valuable archive holdings and library collections worldwide

Documentary heritage reflects the diversity of languages, peoples and cultures. It is the mirror of the world and its memory. But this memory is fragile. Every day, irreplaceable parts of this memory disappear for ever.

UNESCO has launched the Memory of the World Programme to guard against collective amnesia calling upon the preservation of the valuable archive holdings and library collections all over the world ensuring their wide dissemination.

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Go there for survey:

\* Memory of the World Programme Awareness Survey 2009 This survey is intended for intended for library, archives and museum specialists.

**Please visit the site:**

**[http://portal.unesco.org/ci/en/ev.php-URL\\_ID=1538&URL\\_DO=DO\\_TOPIC&URL\\_SECTION=201.html](http://portal.unesco.org/ci/en/ev.php-URL_ID=1538&URL_DO=DO_TOPIC&URL_SECTION=201.html)**

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## **ARCHAEOLOGY: UNESCO** **CELEBRATES NUBIAN SALVAGE AT** **ASWAN**

(by Cristiana Missori) (ANSAmEd) - CAIRO - UNESCO is commemorating the mammoth combined effort by archaeologists, engineers and researchers from across the globe which led to the salvaging of extraordinary temples and Pharaonic monuments which would otherwise have disappeared under the waters of Lake Nasser with the construction of the Aswan High Dam. Fifty years on from the earnest appeal sent out from Egypt and Sudan for an international salvage campaign for the Nubian monuments, UNESCO will be celebrating this important anniversary with the conference: 'Lower Nubia: Revisiting memories of the past, envisaging perspectives for the future' to be held on March 21-24. With the construction of the great dam - approved by the Egyptian government in 1958 to allow the country's economy to be modernised, and built between 1960 and 1964 - 360 kilometres of territory in Egypt and 140 in Sudan were to be irretrievably transformed into a great inland sea. Which is why the Cairo and Khartoum governments resolved to sign an official request for an appeal to UNESCO.

So it was that in 1960 the organisation turned to its member states and what was later to be called the greatest archaeological salvage operation of all time got underway. Over 70 separate archaeological missions from 25 countries explored each of the Nubian regions that were due to be flooded, both in Egypt and in Sudan. "Hundreds of sites were inventoried and thousands of objects were identified and conserved", recalls Professor Giuseppe Fanfoni, director of the Italo-Egyptian Centre for Restoration and Archaeology in Cairo. He took part in two missions sponsored by the Egyptology Institute of Rome's La Sapienza university, under the direction of Professor Donadoni: those in the Egyptian village of Tamit and in Sudan's Sonqi centre. "We worked extremely quickly in Tamit. We only managed to complete survey and a technical drawing of the village", the archaeologist notes, saying of how he remembers: "the animals that, like us, sought shelter at the highest parts of the village, while our mission awaited the boat that allowed us to escape to safety before the flood waters closed in and everything was submerged". It was a giant undertaking, which permitted the savings of innumerable finds and monuments, Fanfoni remarks, "but many others were lost. An inestimable blow to the history of humankind". A good 14 temples and monuments scattered along this stretch of the Nile valley were dismantled stone by stone and completely reconstructed beyond the reach of the waters.

Without doubt, the most famous of these operations were those leading to the salvaging of the two temples of Abu Simbel and those of Philae.

Five temples - including that of Ellesya, which is today reconstructed in Turin's Museum of Egypt - were donated to the countries that collaborated in the rescue work. During the conference at Aswan, which has been organised by Egypt's and Sudan's ministries of culture, scholars who took part in the salvage campaign will be presented with an award by UNESCO. Some hitherto unpublished documents relating to the period of salvage work will go on display, and a new campaign for the preservation of the Nubian heritage will be launched.(ANSAmEd).

Please visit the site: <http://www.ansamed.info/en/top/ME13.WAM40254.html>

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## ***INTERNET SITES***

### **SISYPHOS**

Description: Sisyphos is an Internet search engine providing access only to archaeological and Egyptological websites. Similarly to Intute, the resources accessible through this website have been selected according to their scientific relevance. Sisyphos covers all aspects of Classical (Greek-Roman) Archaeology as well as the Minoan and Mycenaean civilisations; Etruscan studies; and Egyptology. In addition, the website also lists general archaeological resources (history of the subject, theories, methods, institutions, excavation techniques). The bilingual interface in German and English is effective; it is possible to search or browse the listed resources.

The strength of this website is evident for its core fields of Classical Archaeology and Egyptology, and within them, the ancient art of those civilisations. The available metadata is sufficient to determine the relevancy of the resources, but there are no descriptions evidencing merits and faults of the websites or the targeted audience. It is therefore recommended to use its search facilities performing a full-text search of the included resources; it works like Google but it yields more relevant results.

URL	<a href="http://sisyphos.uni-hd.de/">http://sisyphos.uni-hd.de/</a> [English; German]
Type	Non-bibliographic databases; Resource guides and directories
Classification	
Responsibility	University of Heidelberg (Copyright Holder)
Publisher	University of Heidelberg (Publisher)
Country of origin	Germany
Audience	Higher Education
Format	HTML
Requirements	JavaScript-enabled browser, Use of Cascading Stylesheets
Cataloguing date	2009-03-02
Catalogued by	Andrea Vianello

**Please visit the site:** <http://www.intute.ac.uk/artsandhumanities/cgi-bin/fullrecord.pl?handle=20081119-15033535>

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## **850 ANCIENT SITES ON GOOGLE MAPS**

Among the most popular posts on this little blog is a page that announces that I had uploaded a webpage with 500 links to Google Maps sites. It appears to have been useful, but unfortunately, it was in Dutch. It was also incredibly large. I have now changed all that. Here is the new, English page, which contains links to more than 850 sites (858 to be precise), ranging from the Bronze Age to the reign of Heraclius, and from Hadrian's Wall in Britain to Taxila in Pakistan.

I also introduced a division into three categories.

1. There are the normal sites, like the one illustrated next to this article (Göbekli Tepe in Turkey, the world's oldest known temple);
2. sites indicated with a yellow marking contain more than one monument (like Lepcis Magna);
3. and there are several sites in italics, which means that there is nothing to be seen, usually because there is a city on top of it today (like Regensburg, where you can still recognize the ancient streets).

The obvious recommendation is to look at the yellow ones and ignore the rest, unless you really need to know the exact location of the Roman fortress of Flevum (here). If you are interested in more links, you can download a file with 1300 Google Earth bookmarks for ancient Near Eastern sites, made by the Department of Linguistics and Philology of the University of Uppsala, here.

PS: My favorite is this one: [http://www.livius.org/a/libya/bu\\_njem/bu\\_njem.html](http://www.livius.org/a/libya/bu_njem/bu_njem.html)

This entry was posted on Sunday, March 1st, 2009 at 1:16 am and is filed under LacusCurtius, Livius.Org, Sicily, ancient Iran, ancient Egypt, ancient Germany, ancient Greece, ancient history, ancient libya, ancient mesopotamia, ancient Persia, ancient Rome, ancient Syria, ancient turkey, architecture, Belgium, Italy, Judaea, military history, Netherlands, storia antica, travel, Umbria. You can follow any responses to this entry through the RSS 2.0 feed. You can leave a response, or trackback from your own site.

**Please visit the site:** <http://rambambashi.wordpress.com/2009/03/01/850-ancient-sites-on-google-maps/>  
[Go there for many links]

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## **PYRGOS MUNICIPALITY – CYPRUS,** **RESULTS OF THE EXCAVATION IN 2008**

MARIA ROSARIA BELGIORNO PROJECT  
SPONSORED BY  
MINISTERO AFFARI ESTERI - ITALY  
PYRGOS MUNICIPALITY - CYPRUS

A second building was discovered and brought to light in 2008 South to the industrial area. This is a unique construction, consisting of two rooms arranged in a triangular area. As the nearby building it was probably destroyed by the earthquake and abandoned in 1800 BC circa.

(Fig.1)

The building seems destined for cult due to the presence of an altar, flanked by a channel on two sides. The channel is made of basalt heavy pebbles and it is plastered on the sides, it served probably for the disposal of the blood of the victims and the lustral water. The latter was taken from a squared pit located on the north side of the altar itself. The religious destination is confirmed by the abundant materials found (not only ceramics), including 4 calcarenite horns of different sizes, a number of animal sacrificed bones (mainly fragments of heads of bull and rams and tens of shaped shells. The particular triangular setting of the building (temenos) seems attributable to the last episode of reconstruction of the temple, considering the ceramic chronology that goes from the Early Bronze Age (2500-2350BC) to the Middle Bronze Age II (1850-1800 BC).(Fig.2)

Of importance and historical interest, especially for the extremely high chronology of the complex (2500-1800 BC), are the comparisons with similar areas, but not triangular, described in several passages of the Bible, especially the evidence concerning the presence of the altar with the channel on the side for the collection and disposal of sacrificial liquids (Fig.3).

Moreover the unique triangular shape of the complex seems to be the enlarged replica of the smaller triangular construction positioned in the middle of the “hypotenuse” on the main building.

This smaller triangle could belong to the first emplacement of the temple, in the Early Bronze Age, as its foundations run deeper than the outer walls.

A large hole encircled by a double line of stones in the middle of the small triangle was probably the original location of the pithos jar found in fragments around the altar.

Fragments of a second pithos jar were on the southern side of the altar. Meanwhile a fragmentary four legged Red Polished bowl of rare shape was found on the channel nearby the door passage.

Room n°2 was divided by n°1 in the final phase of reorganization of the complex, with a dividing wall overlapping a filling of earth .

The room is rectangular, tapered toward southeast to follow the triangular shape of the complex. It is divided into two areas: the north is covered, the south unroofed. The North keeps intact the lying of the collapse of structures at the time of the earthquake. The collapse, which was not removed, it gives us important information on the original.

Such as the fact that the west side of the wall, had been reinforced, precisely at the point where there was a small rectangular window. The collapse of the west wall, with the stones still in connection, clearly shows its existence.(fig.4)

This remember a clay model of Arkanes of 2<sup>o</sup> mill. BC ( J.Boardman, RDAC, 1971 37-42), which has an opening on the roof from which curious overlook inside, and a second model of the Cypriot archaic with people who peep from side windows the Musicians playing (Karageorghis, 2006,

103 fig.90). The window of Pyrgos is the first evidence of a reality recorded only by the choroplastic, even if we do not have any connection for a specific cult function.

The material found inside the room n<sup>o</sup>2 is very different from that of the room n<sup>o</sup>1. No reconstructible vases were found in connection to the walls collapsed, and some bowls of the Middle Bronze Age and a jug were placed near the passage between roofed and open-air zones. The bones of oxen and goats, especially the parts of the head, in addition to many shells of various shapes in order to be able to be used as a pendant or a cloth decoration, were found mainly in the open-air area.

A bronze needle with a round opening (needle for leader), a pair of bronze Philia type earrings characteristic of Early Bronze Age, found in the deepest levels, suggest that the building, in terms of its first episode of construction, is one of the most ancient constructions of the settlement. Moreover we can not exclude that the small temple complex was built on previous much older domestic structures.

It should be noted that the excavation of 2008 has confirmed one of the most interesting aspect of Pyrgos/Mavroraki architecture, the axial guidance of the “palace” implant. An approach which is maintained even for the triangular building brought to light in 2008.

In fact, with little deviation from the geographical coordinate North, South and East-West, the “palace” of Pyrgos / Mavroraki shows an intentional orientation of main and secondary walls, which divide large and small rooms of the complex within the limits of a prehistoric architecture .

Although the structure of the walls is characteristic of the dwellings of the Early and Middle Bronze Age Cyprus, there is a meticulous care in maintaining the architectural complex in a species of pattern or architectural model, this provides very specific rules for both the erection of walls in interior rooms and spaces, from the standpoint of structural finishes.

Starting from the beginning of the industrial setting, it seems that the area was at first divided into sectors of almost equal dimension.

This means that each room had roughly the same size, calculated approximately 13-15metres x 13- 15 metres . The three major areas that are distinguished by different industrial destination were very similar in size, but not for intended use: the olive press, the textile room on West, the courtyard for metallurgy on South. In fact, the internal divisions of these area belong to next episodes of space reuse. This can not be by chance, since the construction of the walls asks very specific rules which follow specific phases.

These included the levelling of the building from the definition of the perimeter, the imposition of the foundations, the construction of a grid of wood in which you have the raw files of the bricks, the construction of the roof, the excavation of the internal floor level at least 30 centimetres below the foundations, the plastering of all horizontal and vertical surfaces and construction of interior furnishings fixed with mud and plaster.

The position of the temple complex compared to the industrial choice seems appropriate, if we compare with that of buildings of worship of the end of 2<sup>o</sup> millennium BC in Cyprus, as it faces the area where the metallurgical activities took place.

This peculiarity confirms the intended use of the building and anticipates of several centuries the Cypriot religious tradition that linked places of worship to the production of copper, and invoked the divine protection on metals production.

This is amply documented by the famous Cypriot cult places of the end of the second millennium BC like Myrtou Pigadhes, Kytion, Athienou and Enkomi

**Please visit the site:**

[http://www.pyrgos-mavroraki.net/pyrgos\\_mavroraki\\_00002f.htm](http://www.pyrgos-mavroraki.net/pyrgos_mavroraki_00002f.htm)

**[Go there for figures.]**

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## **WHAT IS THE DIGITAL ARCHAEOLOGICAL ATLAS OF THE HOLY LAND?**

The Digital Archaeological Atlas of the Holy Land (DAAHL) is an international project that brings together experts in information technology including Geographic Information Systems (GIS) and the archaeology of the Holy Land (modern Israel, Palestine, Jordan, southern Lebanon, Syria and the Sinai Peninsula) to create the first on-line digital atlas of the region held sacred to the three great monotheistic faiths - Judaism, Christianity and Islam. Using the power of spatial information systems such as Google Maps and Google Earth, GIS, the tens of thousands of recorded archaeological sites for the region - from the remote prehistoric periods to the early 20th century - will be entered into a comprehensive database along with site maps, photographs and artifacts. The historical and archaeological content for this project will be developed by a team of over 30 international scholars working in the region, helping to provide the data used to create the Atlas. This website and its content will serve as the prototype "knowledge node" of a more comprehensive Digital Archaeological Atlas Network for the Mediterranean region.

New developments in telecommunications and information technology are revolutionizing the fields of archaeology, history, and the social sciences. The atlas represents a signature project of the Center for the Interdisciplinary Study of Art, Architecture and Archaeology (CISA3) at the University of California, San Diego and the Geo-Archaeological Information Applications (GAIA) Lab at Arizona State University. The atlas project brings together many of these advances based on new discoveries and the latest content concerning one of the most politically complex but meaningful geographic regions in world heritage. The control of time and space allow archaeologists to uncover address the 'big questions' of human history and social evolution. These include answering how and why the major technological revolutions of history occurred and influenced social and historical change in the Middle East. In broad strokes, the control of time and space are essential commodities in the construction of a heritage-based cyberinfrastructure, which come together for scholars and the general public in the DAAHL. New developments in GIS, high-precision radiometric dating methods, and archaeological fieldwork carried out in the Holy Land (Israel, Jordan, Palestine, Lebanon, southern Syria and the Sinai Peninsula) have helped identify significant "Global Moments" of fundamental social change in this region. The atlas will harvest, analyze and disseminate settlement pattern and new archaeological data for each key period of culture change in the Holy Land, from the Lower Paleolithic over 2 million years ago to the early 20th century when the region came under British control.

This prototype web site is organized around two central themes, a series of case studies, historic maps, and database search functions.

The "Empires" theme organizes information that illustrates the march of empires across the Middle East, from the development of the first Egyptian state in about 3000 BCE to the Ottoman Empire in 1918 CE.

Here, the DAAHL concentrates on the impact of imperial "ordering templates" upon the lifeways of indigenous peoples in the region, as they are reflected and refracted by imperial and local traditions. The DAAHL website incorporates an interactive Google Maps interface, which can be animated to show the spatial footprints of more than 20 empires. A drop-down list lets the user select any of the empires; a selection automatically loads text in the right side of the page that introduces the empire, and queries the DAAHL database to present the archaeological sites in the database that were contemporary with the chosen empire. (The user must be zoomed in about halfway to see the site points). Each site point can be clicked to open a balloon with its name, and the name can be clicked to open a page in the atlas that contains three groups of information: 1) the listing from the DAAHL database, showing all the filled-in fields from the site table; 2) a listing of all the chapters or case studies in the DAAHL website that discuss the project; 3) a detailed, verbal description of the site, which can be richly embedded with pictures, tables, and static maps.

**Please visit the site: <http://daahl.ucsd.edu/DAAHL/> [Go there for many links]**

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# **THE ORIGINS & SPREAD OF** **AGRICULTURE** **PPNB JERICHO c. 8000 BC**

This site is designed to hold my recent research into the origins of agriculture in the Levant, together with its subsequent spread into Europe and Egypt. It forms part of a larger project looking at the origins and development of agriculture in Egypt.

The site aggregates information that has been published, in often fragmentary form, as a series of books and papers. Although it is a complete work as it stands, I view it very much as a work in progress. There is much more that I need to do to it to refine it, and some areas and subjects are dealt with in less detail than others, which needs to be remedied in later versions. In addition, new information is published on a fairly frequent basis, and this will be incorporated as it becomes available. All changes are listed in the version control table at the bottom of this page.

As with my Egypt-focused sites, this website retains the numbering as it appeared in the original document, which enables me to keep the document and the site at the same version level without difficulty. However, although it certainly makes life easier for me, it does look slightly strange on a web page.

Images will be added later.

Any questions or comments, please don't hesitate to contact me (Andie Byrnes) - I am always on the lookout for feedback: iAndie Byrnes [a.byrnes@ucl.ac.uk](mailto:a.byrnes@ucl.ac.uk)

Please visit the site: <http://www.near-east.historians.co.uk/index.html>

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## **BRITISH LIBRARY DISSERTATION** **ETHOS**

Via History News Network <<http://hnn.us/blogs/2.html>>, the British Library's EThOS <<http://ethos.bl.uk/>> beta is now available on-line.

EThOS stands for Electronic Theses (dissertations) Online Service.

Nearly all British Universities are participating (except: Cambridge and Oxford; naturally not). Any thesis ever accepted in Britain is eligible for inclusion in the database, possibly going back to the 1600s. The theses have been OCRed, not just scanned, which means that you can do keyword searches on the PDFs, for example. And, if you only want an electronic copy, it is free of charge (hardcopy costs, obviously). If the thesis you want hasn't been scanned yet, then you may be asked to contribute towards the cost of that.

Brilliant.

All good wishes,

Judith

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## ***ΝΕΕΣ ΕΚΔΟΣΕΙΣ – NEW PUBLICATIONS***

# **NEW DIRECTIONS IN THE SKELETAL BIOLOGY OF GREECE**

L. Schepartz, S. Fox. and C. Bourbou. 2009. *New Directions in the Skeletal Biology of Greece*. OWLS vol. 1, Hesperia Supplement 43, Princeton.

Physical anthropology, the study of human skeletal remains, has assumed an increasingly prominent role in the archaeology of Greece over the past 30 years, both in the field and in interpretive research. In addition to including stimulating case studies ranging in date from the Palaeolithic to modern periods, the 17 chapters in this book provide an overview of bioarchaeological research across Greece and Cyprus. The volume is the first in a series of monographs from the Wiener Laboratory (the Occasional Wiener Laboratory Series, or OWLS) that demonstrates the impact of archaeological science on Mediterranean archaeology.

The book is edited by Lynne A. Schepartz (Associate Professor of Anthropology at Florida State University), Sherry C. Fox (the Director of the Wiener Laboratory) and Chryssi Bourbou (a bioarchaeologist at the 28th Ephoreia of Byzantine Antiquities).

### Contents:

Introduction: *New Directions in the Skeletal Biology of Greece*  
by Lynne A. Schepartz, Sherry C. Fox, and Chryssi Bourbou

### Chapter 1

*Bioarchaeological Approaches to Aegean Archaeology*  
by Jane Buikstra and Anna Lagia

### Chapter 2

*Petalona: Link between Africa and Europe?*  
by Katerina Harvati

### Chapter 3

*“In This Way They Held Funeral for Horse-Taming Hector”:* A Greek Cremation Reflects Homeric Ritual  
by Philippe Charlier, Joël Poupon, Murielle Goubard, and Sophie Descamps

### Chapter 4

*It Does Take a Brain Surgeon: A Successful Trepanation from Kavousi, Crete*  
by Maria A. Liston and Leslie Preston Day

### Chapter 5

*The Malleable Body: Headshaping in Greece and the Surrounding Regions*  
by Kirsi O. Lorentz

### Chapter 6

*Skeletal Evidence for Militarism in Mycenaean Athens*



by Susan Kirkpatrick Smith

Chapter 7

Patterns of Trauma in a Medieval Urban Population (11th Century A.D.) from Central Crete

by Chryssi Bourbou

Chapter 8

Investigating the Human Past of Greece during the 6th–7th Centuries A.D.

by Chryssi Bourbou and Agathoniki Tsilipakou

Chapter 9

The World's Largest Infant Cemetery and Its Potential for Studying Growth and Development

by Simon Hillson

Chapter 10

Differential Health among the Mycenaeans of Messenia: Status, Sex, and Dental Health at Pylos

by Lynne A. Schepartz, Sari Miller-Antonio, and Joanne M. A. Murphy

Chapter 11

Regional Differences in the Health Status of the Mycenaean Women of East Lokris

by Carina Iezzi

Chapter 12

Anthropological Research on a Byzantine Population from Korytiani, West Greece

by Christina Papageorgopoulou and Nikolaos I. Xirotiris

Chapter 13

Bioarchaeological Analysis of the Human Osteological Material from Proskynas, Lokris

by Anastasia Papathanasiou, Eleni Zachou, and Michael P. Richards

Chapter 14

Isotope Paleodietary Analysis of Humans and Fauna from the Late Bronze Age Site of Voudeni

by Eirini I. Petroutsas, Michael P. Richards, Lazaros Kolonas, and Sotiris K. Manolis

Chapter 15

Population Mobility at Frankish Corinth: Evidence from Stable Oxygen Isotope Ratios of Tooth Enamel

by Sandra J. Garvie-Lok

Chapter 16

Porotic Hyperostosis in Neolithic Greece: New Evidence and Further Implications

by Eleni Stravopodi, Sotiris K. Manolis, Stavros Kousoulakos, Vassiliki Aleporou, and Michael P. Schultz

Chapter 17

The Application of mt-DNA Analysis to the Investigation of Kinship from Skeletal Remains

by Maria Georgiou, George D. Zouganelis, Chara Spiliopoulou, and Antonis Koutselinis

The book is available for purchase through our distributor, David Brown Book Company in North America (+1 800 791 9354) and Oxbow Books (+44 (0)1865 241249) in Europe and the Rest of the World. You can [order online through our website](#). The order will be directed to the closest distributor's office.

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# **GREEK COLONISATION: AN ACCOUNT OF GREEK COLONIES AND OTHER SETTLEMENTS OVERSEAS, VOLUME TWO. MNEMOSYNE, SUPPLEMENTA 193**

Bryn Mawr Classical Review 2009.03.14

Gocha R. Tsetskhladze (ed.), Greek Colonisation: An Account of Greek Colonies and Other Settlements Overseas, Volume Two. Mnemosyne, Supplementa 193. Leiden/Boston: Brill, 2008. Pp. xviii, 566; 56 figs. ISBN 9789004155763. \$232.00.

Reviewed by Elias K. Petropoulos, Democritus University of Thrace  
([elias\\_p@otenet.gr](mailto:elias_p@otenet.gr))

Word count: 3202 words

[The individual essays are listed at the end of the review.]

In the present work edited by G. Tsetskhladze the relevant specialists have assumed the task of presenting the colonial activity of the ancient Greeks in Northern Aegean, the Adriatic, Libya and Cyprus. In addition, three thematic chapters examine the situation in Central Greece on the eve of the colonisation movement, stories about the foundation of settlements, and Greek expansion during the Classical period.

The first chapter, by Michalis Tiverios, is dedicated to Greek colonial activity in the northern Aegean. The text includes a full list of ancient Greek colonies in northern Greece, from the Chalcidice to the Dardanelles with a chronological range from the Trojan War to the concluding phase of Greek colonisation. We may distinguish two basic periods within this time-span, which divide in the 8th century BC when the so-called Second Greek Colonisation Movement began.

Ionians from Euboea, Eretrians and Chalcideans seem to have played a leading part during the first period as well as at the beginning of the second (until the outbreak of the so-called Lelantine War, which put an end to the Euboeans' power).

According to Tiverios, the discovery of early Euboean pottery in northern Greece functions as proof of the Euboean presence in the area. In addition he believes that there is no real reason why we should not regard as Euboean all the ceramic products made by the Euboean colonists and their descendants in northern Greece, even if they are characterised by clays of different composition. All the available archaeological evidence leads to the conclusion that southern Greeks, especially Ionians from Euboea, settled in the Chalcidice after the Trojan War (15). These Greeks must have come to know northern Greece as early as the Mycenaean period, when people were moving about in those parts in tribes or clans.

Another wave of Euboean colonists followed in the 8th century BC, i.e. during the second Greek colonisation, when a large number of Euboean colonies and emporia were founded. They occupied almost all the available living space here,

avoiding significant gaps, which risked being filled by other Greek cities. It seems that the most significant exception was the foundation of Poteidaea by the Corinthians, at a time when the Euboeans were no longer a great power. This is why the city of Chalcis chose (for a short time it is true) to co-operate with the Andrians, that is people who were demonstrably hostile towards their rivals (the Eretrians), in order to found new colonies in Chalcidean areas which were being threatened and needed support. The Andrian colonies (such as Acanthus, Stagirus, Sane and Argilus) in north-eastern Chalcidice and at the head of the Strymonic Gulf were founded around the middle of the 7th century BC.

In the second colonisation movement of northern Greece the arrival of Parians on the island of Thasos starts a period that has left an indelible mark on the subsequent history of the region. A great advantage --inter alia-- of the site was its proximity to the Thracian coast, about which the first colonists probably already had information. Thus, the Parians opted to settle at the most northerly end of the island in order to begin their plans to expand onto the coast opposite. Tiverios claims that the initial contact of the island with the fertile lands on the opposite shore of Thrace might have been made before the colony was officially established in around 680-670 BC (73-74). It seems that neighbours of the Parians in the new land were the Thracians and probably the Phoenicians, though, as the archaeological evidence shows, it is impossible to trace the latter.

Despite the resistance of the Thracians and also of other Greeks, literary and archaeological finds confirm that the colonists managed to settle on the Thracian coast (the so-called Thasian Peraia) comparatively quickly, by the second half of the 7th century BC, where they established, among other colonies and emporia, important apoikiai such as Neapolis, Oesyne, Galepsus, and Stryme.

In trying to consolidate themselves mainly in the areas close to their island, the Thasian-Parians left room east of the Nestos River for other Greeks to found colonies. Several important colonies were then founded such as Abdera, Maroneia, Dicaea, and Orthagoria, all of them of Ionian origin.

The colonisation of the island of Samothrace is problematic because of the lack of evidence in the ancient written sources. Archaeological data from the site show that Ionian elements co-existed with Aeolian elements and the latter appear to have been stronger. So, it seems likely to the author to conclude that the first settlers who arrived on the island, must have come from Aeolis, from the nearby Troad or from Lesbos. They would have been accompanied by Ionians from Samos (110). Samothrace occupied a very important location on the maritime routes which linked Asia with Europe and Aegean islands with Thrace.

The first colonists of the island were very soon obliged to look for fertile land on the mainland opposite, because Samothrace had only one small plain in the west and a narrow strip of fertile land along its north coast. As the Parians of the Thasos colonised the opposite Thasian Peraia, in the same way the Greek colonists of Samothrace started to conquer the rich Thracian Peraia, thus becoming the Samothracian Peraia, which consisted of a coastal area from Mt.

Ismaros to the River Hebrus and was bounded to the north by the foothills of Mt. Zone. In this area the Greeks established several colonies: Drys, Mesembria, Zone, Sale, Tempyra and Charakoma.

As far as the Aeolian and Ionian colonisation in the north-eastern part of Aegean Thrace is concerned (i.e. the coastal cities east of the Hebrus River as far as Elaious at the

southernmost tip of the Chersonese), our information is based mainly on the ancient written tradition because of the very limited excavations in the area (118).

We also know that the Athenians too took a particular interest in the north-east Aegean, though a somewhat tardy one, i.e. after the end of the 7th century BC.

The next chapter, written by Pierre Cabanes, introduces us to Greek colonial movement in the Adriatic Sea. The first part of the chapter is dedicated to the ancient written (almost exclusively Greek and, subsequently, Latin) tradition and the myths about the contacts between the Greek world and the two shores of the Adriatic. The different stages of Greek colonisation are then examined, starting with Euboean colonial activity in the area during the second third of the 8th century BC. In spite of the information we have from ancient sources (mainly Plutarch) on early Euboean (Eretrian) colonial activity in Corcyra, many modern scholars reject this Eretrian colonisation because of the lack of any relevant archaeological evidence thus far. The next colonial stage begins with the Corinthian settlement in Corcyra, founded by Chersicrates, in 733 BC. The new colonists clashed with the Eretrians and the locals (Liburni), who were either driven out or subjected. Though the mother-city (Corinth) and the colony (Corcyra) soon became -- after two generations--hostile, it seems that those hostilities were not without respite, as shown by their collaboration in founding the colonies of Epidamnus-Dyrrhachium and Illyrian Apollonia in order to control all the routes linking the Adriatic coast to the interior (169). But the Greeks did not stop at Epidamnus. They continued their colonial activities to the north:

Phocaeans, Rhodians, Thessalians, Aeginetans, Athenians, and even the Syracusans founded many apoikiai and emporia on the Adriatic shores.

Greek colonisation continued on the Dalmatian and Albanian coast, where many colonies were established: Nymphaeum, Issa, Pharos<sup>1</sup> and Black Corcyra. In the late 4th century BC the Athenians too were obliged to create a naval base in a region of good grain cultivation in order to find new sources of wheat to feed the population of Athens.

The colonies in the Adriatic continued their history during the Hellenistic period with many vicissitudes, especially the colonies of Epidamnus-Dyrrhachium and Apollonia. The Roman invasion in 229-228 BC in the first Illyrian War affected the situation in the whole area. It was the time when the maritime piracy increased in the Adriatic Sea and the royal dynasties changed in Epirus and Illyria. In the very next century, i.e. after the massive Roman intervention along Adriatic shores, there are indications which attest the progression of the Greek presence, at the moment that Rome became the sole power in the region.

The ancient Greek presence in the territory of Cyrenaica is the topic of the next paper by Michel Austin. The largest and most prosperous Greek city in Libya, according to ancient written sources and the archaeological evidence so far, is Cyrene, about which there are unusually abundant Greek literary sources, mainly Herodotus's narrative. Indeed, no other Greek foundation is related in such detail in extant sources, and no other individual founder receives as much attention in literary sources as does the founder of Cyrene, Battos.

However, the author believes that the abundant written sources seem to have some disadvantages. For example, they are not contemporary to the foundation (starting only in the 5th century BC) and they are one-sided in giving primarily a Greek perspective, focusing solely on Cyrene. The other Greek cities of Libya (Tauchira, Barca,

Euesperides) are almost completely excluded. That is why archaeological investigations are very significant, providing some general control over at least the most basic elements in Herodotus's narratives.

The first Greek settlement in Libya was relatively late in the expansion of the Greek world. The author suggests the last third of the 7th century BC as the date of the foundation of Cyrene. A more precise chronology seems to him rather illusory (192). The role of the island of Thera (Santorini) in the original foundation of Cyrene is repeatedly attested by many writers over a long period of time and it may be taken as historically true. The author, however, believes that Thera was only a starting point, and a number of parts of the Greek world either participated in the initial foundation or in its subsequent expansion (193). Archaeological investigations have proven Aegean connexions (mainly Cretan) from the very start of the establishment in Libya (204). These connexions are reflected in the finds of Aegean pottery at the major Greek Libyan sites, including an unusual amount of Cretan material as well as the more common East Greek and Rhodian wares (194). Thus, the author offers the opinion that the settlement had been increasingly viewed in the Greek world as an attractive prospect.

The migration from Greece to Cyprus and the process of Hellenisation of the island is the subject of the following chapter by Maria Iacovou. From the very beginning the author points out that the purpose of her chapter is to explore as many different avenues that can provide insights into how the protohistoric Greek population movement came about and what changes it brought to the human environment of Cyprus, how it manifested itself in the linguistic and material record and how it affected the issues of ethnicity and state formation (223). Her essay is divided into two parts: the first deals with the island of Cyprus before the arrival of the Greeks (i.e. it shows what the island was like), while the second begins with the situation in the Early Iron Age and the process of Hellenisation of the island's population. During the first period it seems that Cyprus remained well beyond the periphery of Mycenaean political authority with no Mycenaean palace characteristics. This is contrary to what we can detect in the island of Crete. The conclusion is, thus, that prior to the 12th century BC the idea of a colonial penetration of Cyprus by Mycenaean Greeks cannot be supported and the politico-economic system of the Mycenaean palaces is not responsible for the Greek colonisation of Cyprus (230).

The second part of the chapter is more extensive and covers a wide chronological period from the Early Iron Age to Late Antiquity, though there are some modern Greek parallels to the colonisation episode of the 19th and 20th centuries AD. Iacovou points out three ways in which the illiterate newcomers from the Aegean, after they had settled in the Late Cypriote urban centres, managed to commence the process of Hellenisation: they adopted and adapted the local Cypro-Minoan script in order to write their own language, giving, thus, substance to their ethnicity; they changed the taste of figurative representations of the island into an Aegean-type painted pottery of eleventh-century Cyprus, with the aid of which the Greek immigrants began to nurture an historical memory of their ancestry; they provoked transformations in mortuary practices. The material landscape of the Cypro-Geometric (11th-8th centuries BC) settlements is characterised by absence of ethnic boundaries. That means that the people of those settlements did not feel necessary to safeguard their identity from a separate invasive material culture (the Aegean for instance).



The establishment of a Greek-speaking population in Cyprus had another effect on Early Iron Age cultural integration: the optimisation of Cyprus's metal industry, redefining the island as a major international metals' trader in the Mediterranean during this period (250). This integration (or cultural homogeneity of the Cypriot society) was, nevertheless, divided into three different linguistic groups: Greek, Phoenician and an old unknown Eteocypriot. After having analysed the process by which Archaic-Cypriot Greek and its carriers were established in the island shortly before the end of the 2nd millennium BC, the author's efforts are focused in tracing the appearance and the subsequent history of the Phoenicians and their language in Cyprus. Finally, she tries to highlight the history of Cypriot monarchies and kingdoms in the 1st millennium BC.

Jean-Paul Descoedres offers a significant contribution regarding the situation in Central Greece just before the beginning of the ancient Greek Colonisation of the 8th and 7th centuries BC, trying to demonstrate the process itself, its characteristics and its causes. After a very detailed analysis of the available ancient written sources, as well as the archaeological evidence from the area under examination (290-360), the author presents the reasons why the ancient Greek immigrants left their motherland and opened their geographical horizons to the entire Mediterranean and the Black Sea. The author believes that ancient Greece during this time was completely self-sufficient in rural and raw materials (except for tin). The country produced surpluses of agricultural products that could even be exported in exchange for various luxury commodities, thus ruling out the opinion that the prosperity of the motherland was due to the provisions of their colonies in Sicily and southern Italy.

According to the evidence, it seems very unlikely that climatic disasters could have been a catalyst to the colonisation movement, if we consider that Euboea and Athens serve as good examples in this view (361-362). Following the same logic, the author concludes that there is no evidence that overpopulation in the modern sense of the term could have been the main reason of the colonisation movement in the 8th century BC.<sup>2</sup> Finally, the analysis of the evidence leads to the statement that there was a connexion between the start of the colonisation movement and the beginning of the process of the Greek polis formation. This connexion is not at all coincidental.

In the next chapter Jonathan M. Hall provides a theoretical analysis of how scholars approach the colonial foundation stories. In the first section of the chapter, Hall distinguishes three approaches to foundation stories, which, however, are not situated equidistantly from one another: first, the historical-positivist approach (deriving from the Rankean scientific model); second, the poeticist approach; and, third, the historical-constructivist approach. The author believes that the latter two approaches define themselves against the historical-positivist interpretations. In the next section the author's intention is to subject generalising observations on the nature of colonial foundations stories of 27 Italian colonies to more systematic scrutiny. The credibility of the foundation stories and the role of archaeological evidence in confirming the literary foundation dates are discussed in the third section. As a case-study the author presents the evidence regarding the foundation of Taras in the last section of his chapter.

Although the ancient Greek colonisation movement is said to end in the 6th century BC, Thomas Figueira in the final chapter pursues it into the 5th and the 4th centuries in order to present the Greek powers (mainly Athens) which continued to play an important

colonial role in the Mediterranean and the Black Sea. His first section is dedicated to archaic Athenian colonisation (i.e. before 480 BC), which the author characterises as patronal in order to stress the predominance of individual (familial) initiatives. Patronal colonisation was not the only means of occupying new lands. Athens absorbed territories along its margins through incorporation into its core polity (432, 434).

According to the evidence, Attic settlements abroad in this period are grouped into two categories: apoikiai and klerouchiai. The author stresses two major impacts of colonisation on Athenian administration.

First, it helped offset damage done to Attica by Peloponnesian incursions by providing subsistence to hoplites from external assets, especially those who suffered financial setbacks. Second, Athenian colonisation raised substantial revenues.

In the next section Figueira deals with Athenian overseas settlement in the fourth century, a period in which Athens hoped to regain holdings through recolonisation. Especially during the decades of the 360s and 350s Athens tried intensively to recover the colonial holdings lost at the end of the Peloponnesian War. The foundation of the second Confederacy, as well as the elimination of Spartan Aegean naval power at Naxos in 376 BC, served as favourable preconditions for Athens. In the last section the author presents the colonial activities conducted by authorities other than Athens during the classical period (480-323 BC) in homeland Greece, in Asia Minor, in Northern Aegean and Thrace, in the Black Sea, and finally in Sicily and Italy. After a detailed analysis the author concludes that colonisation was an important political tool during the Classical period, especially because it provided more resources, manpower and taxes to the metropolis. A comparison between Archaic and Classical colonisation shows that the latter did not have the total impact of the first one because the Classical colonisers were usually recolonisers. Archaic colonising aristocracies, on the contrary, could find many virgin sites to found their settlements and various populations to interact with.

Overall the book fulfils its purpose of providing an overview of Greek colonies and other Greek settlements overseas in one volume. All major scientific aspects of the colonial phenomenon are reviewed in the light of new evidence. Thus it, along with its companion volume (vol.

1 2006) can be used by students as a useful and up-to-date survey of Greek colonisation in antiquity.

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Notes:

1. I feel obliged to add to the bibliography a recently published study on ancient Pharos by Branko Kirigin, *Pharos: The Parian Settlement in Dalmatia: A study of a Greek colony in the Adriatic*.

British Archaeological Reports International Series 1561. Oxford 2006.

The absence of this important reference in the author's bibliography is probably due to the fact that the draft of this paper was submitted to the editor in early 2000 and the editor published it in 2008, being updated probably only selectively. The same could be said for almost all the chapters of the book under review and the authors themselves felt obliged to make a clear reference to this fact in the first pages of their chapters: see for example the chapters of Tiverios and Iacovou. In his Preface the editor makes special mention of the patience of the authors and their willingness to update and even to rewrite their initial manuscripts.

2. For similar conclusions on the insignificance of metal trade as a main motivation of ancient Greek colonisation, as well as the fact that there was no serious problem of overpopulation, nor land shortage per se in ancient Greece during the 8th century BC, see: Elias K.

Petropoulos, *Hellenic Colonization in Euxeinus Pontos: Penetration, Early Establishment and the Problem of the 'Emporion' Revisited*.

British Archaeological Reports International Series 1394. Oxford 2005:

7, 41; Cherry J. F. and Davis J. L., "Northern Keos in Context," in L.

G. Mendoni and A. Mazarakis-Ainian (eds.), *Kea-Kythnos: History and Archaeology. Proceedings of an International Symposium. Kea-Kythnos*,

22-25 June 1994. MELETIMATA, vol. 27. Athens 1998: 220-1. See also the chapter of Thomas Figueira, p. 428.

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**BEYOND THE HOMELAND: MARKERS**  
**IN PHOENICIAN CHRONOLOGY**  
**ANCIENT NEAR EASTERN STUDIES**  
**SUPPLEMENT 28**

Sagona C. (ed.)

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Supplement 28

Pages: VIII-655 p.

ISBN: 978-90-429-2014-9

Price: 98 euro

**Summary:**

Despite the flurry of research on aspects of Phoenician culture, encompassing their socio-economic developments and the mechanics of their settlement of Mediterranean coastal lands, the fundamental issue of dating Phoenician achievements remains quite fluid. A range of criteria - textual sources, artefact analysis, stratigraphic data, and, increasingly, radiocarbon readings - provide a bewildering and sometimes conflicting picture of Phoenician chronology, which, in many respects, remains tenuous and free-floating. Owing to the nature of Phoenician colonisation, its chronology is often compartmentalised into discrete regional units. This volume brings together a number of essays focusing squarely on the chronology of the Phoenician-Punic world, ranging from the homeland to the western settlements. The essays are written by specialists in their field, who have encapsulated the chronological framework, and the problems therein, for regions touched by Phoenicians interests. A benchmark study, 'Beyond the Homeland' will be of value not only to Phoenician-Punic scholars, but also to those in related fields who need an accessible study (in English) to navigate the chronological complexities of the field.

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## **EΙΔΗΣΕΙΣ - NEWS RELEASE**

# **ANCIENT SHIPWRECK'S STONE CARGO LINKED TO APOLLO TEMPLE HELEN FIELDS FOR NATIONAL GEOGRAPHIC MAGAZINE FEBRUARY 23, 2009**

For a few days back in July 2007, it was hard for archaeologist Deborah Carlson to get any work done at her site off the Aegean coast of western Turkey. She was leading an underwater excavation of a 2,000-year-old shipwreck, but the Turkish members of her crew had taken time off to vote in national elections. So things were quiet at her camp on an isolated cape called Kızılburun.

The shipwrecks' main cargo was 50 tons of marble--elements of a huge column sent on an ill-fated journey to a temple, Carlson thought. But she didn't know which temple, so she used all her days off to drive around the area looking at possibilities.

There were a lot--western Turkey, once part of ancient Greece and later in the Roman Empire, is home to sites like Ephesus and Troy. But Carlson had narrowed down her choices to a list of nearby temples that were in use in the first century BC--the likely date of the shipwrecks' column.

The Temple of Apollo at Claros, about 40 miles (64 kilometers) from Kızılburun, was at the top of her list during the July 2007 election holiday. She drove up to the deserted site and knew she was on to something when she looked at the fallen-down marble columns scattered on the marshy land. "I was struck pretty much right away," she recalls. The columns were Doric, the same as the marble on the ship, and looked like the right size. She waded around in the spring water that floods the site, checking chunks of columns with a tape measure.

"I thought, wow, this is definitely a candidate."

A year-and-a-half later, it looks like Carlson's first impression was right. Using a variety of techniques, she has linked the column in the Kızılburun shipwreck to its likely intended destination, the Claros temple--as well as to its origin, a marble quarry 200 miles (322 kilometers) away on an island in Turkey's Sea of Marmara.

While there is plenty of ancient marble among the shipwrecks that cover the bottom of the Aegean and Mediterranean Seas, this is the first time archaeologists have pinpointed both where the marble came from and where it was going. And that is helping them learn new things about how ancient architects built their temples.

The shipwreck was one of five found in Kızılburun in 1993 on a survey of Turkey's Aegean coast by the Institute of Nautical Archaeology

(INA) at Texas A&M University, where Carlson works. INA has a research center in Bodrum, Turkey. Carlson excavated this "column wreck" from 2005 to 2008, with support from the National Geographic Society's Expeditions Council, and work will continue this summer.

#### Avoiding the Bends and Moray Eels

Excavating underwater is no small task. Archaeologists must avoid the bends, or decompression sickness, and do their work very quickly. The ship carrying the column sank in 150 feet (46 meters) of water. That's deep for scuba gear. Each dive requires a 15- to 20-minute decompression stop on the way back to the surface. Carlson's team has just 20 minutes of actual work time on each dive--the risk of the bends goes up the longer they're down--and they can only dive twice a day.

Excavating an entire site in tiny spurts like that requires careful planning. "But every now and then there'll be a kink in the system, like a big moray eel sitting in your grid square," Carlson says. Her decision: Let the toothy fish stay and spend that dive on a different part of the site.

The column Carlson is studying doesn't look like a column. It's in the form of eight giant drums of marble, each about five feet (1.5 meters) across. The simple, square-topped crown of the top piece shows that it was a Doric column; the bottom is also in the wreck, and the rest of the drums are plain.

They've been underwater for 2,000 years and they're covered in crusty marine life. They aren't delicately carved, either. Marble chips easily, so the ancients always quarried marble blocks with a couple of extra inches on all sides. The blocks jostled together during their journey in the ship, then masons at the destination finished them.

Carlson believes this marble came from Proconnesus, a site on modern-day Marmara Island in the Sea of Marmara, southwest of Istanbul. In satellite photos, the north side of the island shines white; marble is still quarried there today and covers shower stalls across Europe.

#### Tracing Marble to Its Source and Destination

The first clue that the shipwrecks' marble came from there was its distinctive color: white with fine blue veins. Carlson also used stable isotope analysis, a technique that tests stone to see which quarry's chemical signature it most closely matches, to link marble to quarry. And the grains corresponded with Proconnesus marble when examined under a microscope.

To figure out where the marble might have been going, Carlson started by ruling out homes and other small buildings. If the drums were stacked, the column would have been huge--more than 30 feet (9 meters) tall--so Carlson knew it must have been intended for a monument. She narrowed down the list of temples near the shipwreck to those of the right architectural style that were standing or being worked on in the first century BC--the date for the wreck, based on the amphoras (two-handled jars) the ship was also carrying. That's how she ended up at Claros.

Like the famous Temple of Apollo at Delphi, the Claros temple featured an oracle. When visitors came, the oracle, a priest, drank water from a sacred spring and made cryptic pronouncements on behalf of the god, who was associated with truth and prophecy.

Construction on the temple probably started in the third century BC and continued for five centuries. The column in the shipwreck, Carlson says, could have been a donation from a satisfied pilgrim. The temple was never finished, though not for lack of that column. It's possible the builders ran out of money. Ultimately it may have been destroyed by an earthquake or even dismantled by invaders.

#### A Snapshot of Ancient Building Processes

"The fascinating aspect of the Kızılburun shipwreck project is the snapshot of building processes the cargo provides," says William Aylward, a classical archaeologist at the University of Wisconsin, Madison, who specializes in marble architecture. He's helping Carlson learn the column's story.

For example, unlike column parts that are found in place at temples, this stone doesn't have any marks from being attached to a crane. That means rock at the quarry was moved without being lifted--instead, it was moved along the ground. Once at the temple, the pieces were stacked using a crane, except for the bottom.

Aylward was able to identify the columns' bottom drum among the Kızılburun marbles because of four protuberances jutting out that would have been used to maneuver it into place at the temple, and later lopped off.

"Shipwrecks are great because they're in the middle of a real commercial or architectural operation when suddenly they go down," says Clayton Fant, an archaeologist and historian at the University of Akron, in Ohio. He says wrecks like the one at Kızılburun are the only way to catch marble at the point where it was traveling from one place to another. Loose marble blocks left on land get used for other purposes before archaeologists can study them.

The fact that these column pieces were cut to the right size for the Temple of Apollo at Claros suggests that the ancient Marmara quarry was filling custom orders. That's something archaeologists hadn't previously had evidence of in ancient temples.

"I would say there's a good chance the architects had gone to the quarry and talked to the workmen there," Fant says. "Or even sent a crew to shape the blocks. That's why this is really neat."

So the masons in Claros knew just what they were getting, and what they were planning to do with it. But they didn't know their stones would never arrive. Perhaps bad weather doomed the ship; perhaps something else. Some 2,000 years later, the stones are still at the bottom of the sea off Kızılburun cape, just 40 miles (64 kilometers) from the temple for which they were intended. "I don't think you could actually see Kızılburun from Claros, but it's close," Carlson says.

For the builders waiting at the site, "That must have been a real heartbreak."

Please visit the site: <http://news.nationalgeographic.com/news/2009/02/090223-roman-shipwreck-turkey-missions.html>

[Go there for maps]

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## **EARLIER DATE SUGGESTED FOR HORSE DOMESTICATION**

**BY JOHN NOBLE WILFORD**

It's a long way from Kazakhstan to Kentucky, but the journey to the Derby may have started among a pastoral people on the Kazakh steppes who appear to have been the first to domesticate, bridle and perhaps ride horses — around 3500 B.C., a millennium earlier than previously thought.

Archaeologists say the discovery may revise thinking about the development of some preagricultural Eurasian societies and put an earlier date to their dispersal into Europe and elsewhere. These migrations are believed to have been associated with horse domestication and the spread of Indo-European languages.

At the least, on the first Saturday in May the winning thoroughbred should perhaps be toasted not with a julep but a taste of koumiss, the fermented mare's milk favored by equestrians in Central Asia. It's an acquired taste, so keep bourbon at the ready.

Evidence for the earlier date for equine domestication is described Friday in the journal *Science* by an international team of archaeologists. The report's lead author is Alan K. Outram of the University of Exeter in England.

The archaeologists wrote of uncovering ample horse bones and artifacts from which they derived “three independent lines of evidence demonstrating domestication” of horses by the semi-sedentary Botai culture, which occupied sites in northern Kazakhstan for six centuries, beginning at about 3600 B.C.

The shape and size of the skeletons from four sites was analyzed and compared with bones of wild horses in the region from the same time, with domestic horses from centuries later in the Bronze Age and with Mongolian domestic horses. The researchers said the Botai animals were “appreciably more slender” than robust wild horses and more similar to domestic horses.

Dr. Outram said in an interview that it was not clear from the research if the breeding of the tamed Botai horses had by then led to the origin of a genetically distinct new species. But their physical attributes were strikingly different, he added, and this made the animals more useful to the people as meat, sources of milk and beasts of burden and locomotion.

The second pieces of evidence were the marks on the horses' teeth and damage to skeletal tissue in the mouths. The researchers said this was caused by the wear of mouthpieces, bits, inserted for harnessing with a bridle or similar restraint to control working animals.

Other archaeologists, digging at other sites, have detected similar traces of what they said was bit wear, but this has been disputed as support for domestication. Dr. Outram said

that some of the damage to the Botai teeth and jaw bones could only have been caused by bit wear.

Botai pottery yielded the third strands of evidence. Embedded in the clay pots were residues of carcass fat and fatty acids that “very likely” came from mare’s milk, the researchers said. This “confirms that at least some of the mares of Botai were domesticated,” they concluded.

Just when and where domestication of horses first occurred have long puzzled archaeologists. Most of their investigations have concentrated on the steppes of Ukraine, Russia and Kazakhstan, where wild horses were abundant for thousands of years, and burials included the skeletons of prized stallions and early chariots.

In his authoritative book, “The Horse, the Wheel and Languages,” David W. Anthony, an archaeologist at Hartwick College in Oneonta, N. Y., said in 2007 that some of the best evidence put the beginning of horse domestication in the region at about 2500 B.C. He could not be reached for comment on the new findings.

Earlier excavations at Botai sites, conducted by Victor Zaibert of Kokshetau University in Kazakhstan, uncovered piles of horse bones and settlement remains of a people who hunted and herded wild horses for their meat. Dr. Zaibert and Sandra Olsen of the Carnegie Museum of Natural History in Pittsburgh also found traces of bit wear that first raised the possibility that some Botai horses had been harnessed for work and riding.

Both Dr. Zaibert and Dr. Olsen are members of the current excavation team that may have fixed the early time and place for the beginning of the horse-human relationship — a relationship that, as Dr. Outram said, has had “immense social and economic significance, advancing communications, transport, food production and warfare.”

**Please visit the site:**

[http://www.nytimes.com/2009/03/06/science/06horses.html?\\_r=1&ref=science&page\\_wanted=print](http://www.nytimes.com/2009/03/06/science/06horses.html?_r=1&ref=science&page_wanted=print)

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## **ARCHAEOLOGY EXCAVATIONS BEGIN AT FOUR ANCIENT SITES IN FYROM**

Major archaeological excavations have started at four ancient sites around FYROM.

The excavations, funded by about 20 million euro by FYROM's government, will take place at the sites of Heraklea Lynkestis, Skopje's Kale Fortress, Stobi and Isar, the Dnevnik newspaper reported. It is expected that the sites will be completely explored, Pasko Kuzman, Director of Cultural Heritage Protection in the FYROM Ministry of Culture, told the publication.

About 100 people already started excavating unearthed parts of the Heraklea Lynkestis site, which is located at about two kilometres from the town of Bitola in south-western FYROM. The work on one of the best preserved ancient cities in the country is led by archaeologists Anitsa Georgievska and Engin Hasud from the Institute, Museum and Gallery in Bitola.

Founded in the fourth century BC by the ancient Greek ruler Philip II of Macedon – the father of Alexander the Great, and conquered by the Romans two centuries later, Heraklea Lynkestis stood on the Via Egnatia and became one of the key stations on this trading route. Some of the remains that archaeologists have discovered at the site so far are impressive mosaics (in the photograph), Roman baths, town walls, a portico, ancient basilicas, an Episcopal church, a Jewish temple and a Roman amphitheatre which is often used for summer concerts and theatre shows.

Research teams, led by Professor Dragi Mitrevski, also began work at Skopje's Kale Fortress, situated on a hill above the capital. Today's remains date to the sixth century, when Byzantines used stone blocks from the destroyed city of Skupi nearby to construct it. After the 1963 earthquake, Kale's circular, rectangular and square towers were conserved and restored.

The exploration of the Roman city Stobi, near the town of Veles in central FYROM, also began, under the leadership of archaeologist Silvana Blazheva, director of the newly formed institution Stobi.

The ancient town was built where the Erigón River (present-day River Crna) joins the Axiós river (present-day Vardar), making it a strategic trade and warfare centre.

Hundreds of people will also be excavating the Isar site at the village of Marvinci, near the town of Velandovo in southern FYROM. A team, led by Zlatko Videski, headed there last weekend in order to begin preliminary field work.

**Please visit the site: <http://www.balkantravellers.com/en/read/article/1068>**

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## **MARITIME ARCHAEOLOGIST AT HELM** **OF MODERN JOURNEY TO ANCIENT** **EGYPTIAN LAND**

(PhysOrg.com) -- Ancient Egyptians may be best known for building pyramids, but internationally renowned maritime archaeologist Cheryl Ward wants the world to know that they were pretty good sailors, too.

She ought to know. Ward, an associate professor of anthropology at The Florida State University, and an international team of archaeologists, shipwrights and sailors recently built a full-scale replica of a 3,800-year-old ship and sailed it on the Red Sea to re-create a voyage to a place the ancient Egyptians called God's Land, or Punt. Their expedition was financed and filmed as part of a French documentary that will air internationally and on an upcoming episode of "Nova."

"This project has demonstrated the extraordinary capability of the Egyptians at sea," Ward said. "Many people, including my fellow archaeologists, think of the Egyptians as tied to the Nile River and lacking in the ability to go to sea. For 25 years, my research has been dedicated to showing the scope of their ability and now, to proving their independently invented approach to ship construction worked magnificently at sea."

The project grew out of the 2006 discovery of the oldest remains of seafaring ships in the world in manmade caves at Wadi Gawasis, on the edge of the Egyptian desert. The Egyptians used the site to assemble and disassemble ships built of cedar planks and to store the planks, stone anchors and coils of rope until the next expedition -- one that obviously never came. Civil unrest and political instability after the Middle Kingdom period (2040-1640 BC) likely put a halt to further exploration, and the caves were long forgotten, Ward said.

Ward, who serves as principal investigator for maritime archaeology at Wadi Gawasis, determined that the wooden planks found in the caves were nearly 4,000 years old. Based on the shipworms that had tunneled into the planks, she hypothesized that the ships had weathered a long voyage of up to six months, likely to the fabled southern Red Sea trading center of Punt.

Scholars had long known that Egyptians traveled to Punt, but they debated its exact location and whether the Egyptians reached Punt by land or by sea. Some had thought the ancient Egyptians did not have the naval technology to travel long distances by sea, but the findings at Wadi Gawasis confirmed that Egyptians sailed a 2,000-mile round trip voyage to Punt, located in what is today Ethiopia or Yemen, Ward said.

After the discovery at Wadi Gawasis, Valerie Abita of the French production company Sombrero and Co. asked Ward to participate in a documentary about a modern re-creation of the voyage Egyptian female pharaoh Hatsheput sponsored to Punt. Ward designed and supervised the reconstruction of a Punt ship with the assistance of a naval architect, a consulting shipbuilder and an on-site Egyptian archaeologist.

The process involved several trips to Egypt to conduct more research, select a shipyard to build the vessel and choose materials. (It turns out that Douglas fir, the most common Christmas tree in America, is most like the ancient cedar the Egyptians used in terms of strength and density.) Along the way, Ward enlisted the FSU Master Craftsman Program to build small-scale models of the ship to help her to refine details of the plank shape and layout.

By October 2008, the 66-foot-long by 16-foot-wide ship, which Ward dubbed the Min of the Desert, was completed using the techniques of the ancient Egyptians -- no frames, no nails and planks that were designed to fit together like the pieces of a puzzle. After immersing the ship in the Nile to permit the timbers to swell closed around the wood fastenings, mounting the rigging and testing the steering system, they transported the complete ship by truck to the Red Sea -- rather than carry it piece by piece across the desert as the ancient Egyptians would have done.

In late December, the 24-person international crew set sail on the Red Sea with Florida State Assistant Professor of English David Vann, an accomplished sailor and acclaimed author, serving as captain.

Political limitations as well as an abundance of modern-day pirates along the southern end of the route kept the crew from leaving Egyptian waters, and the voyage ended after seven days and about 150 miles into what would have been a 1,000-mile trip to Punt. But the weeklong voyage provided a new appreciation for the skills and ingenuity of the ancient Egyptians, Ward said, noting that the crew was surprised at how fast the ship was able to travel -- approximately 6 knots, or 7 mph.

“The ship’s speed means that journeys would be made in much less time than Egyptologists had calculated, making the whole voyage simpler and more feasible for the ancients,” she said, adding that it probably took about a month to sail to Punt and two months to return. “The technology we used had not been applied to shipbuilding for more than 3,500 years, and it still works as well today as it did then.”

Not that it was easy.

“When it was time to raise the sail and point our bow south toward the land of Punt, we had only our crew and human energy to rely on,” Ward said. “Whether standing and rowing over the rail, hauling on a line to hoist the sail without the help of pulleys or keeping track of our progress along the shore, we all felt connected to those ancient sailors on their epic voyages.”

Provided by Florida State University

**Please visit the site: <http://www.physorg.com/news155399472.html>**

## **SCIENTISTS RECONSTRUCT AN ANCIENT GREEK MUSICAL INSTRUMENT, THE EPIGONION**

ScienceDaily (Mar. 4, 2009) — The ASTRA project, standing for Ancient instruments Sound/Timbre Reconstruction Application, has revived an instrument that hasn't been played or heard in centuries.

Using the Enabling Grids for E-science infrastructure for computing power, a team based in Salerno and Catania, Italy, has reconstructed the “epigonion,” a harp-like, stringed instrument used in ancient Greece. With data from numerous sources, including pictures on urns, fragments from excavations and written descriptions, the team has been able to model what the instrument would have looked and sounded like.

Their model has become sophisticated enough to be used by musicians of the Conservatories of Music of Salerno and Parma in concerts.

The idea and mathematical concepts behind this work is several decades old, the first attempts being made in 1971. Now with grid technology these researchers have the required computing power to recreate an ancient instrument that would previously have been too expensive and too difficult to manufacture by hand. Using grid computing also means that the data used and discovered during the research is easily available to other researchers, such as archaeologists and historians.

“The combination of the EGEE grid computing infrastructures and the high speed GÉANT2 and EUMEDCONNECT networks provided not only the immense computing power needed by ASTRA, it also allowed researchers, historians, physicists, engineers, archaeologists to bring their knowledge and their experiences together,” added Domenico Vicinanza, Technical co-ordinator of ASTRA project and DANTE Network Engineer.

“The benefits of the collaborative approach used in this project are far reaching. ASTRA and EGEE not only make it possible to recreate instruments not existing anymore, they also allow any model and its associated data to be accessed by the whole scientific and education community worldwide.”

The ASTRA project will be demonstrating the epigonion at this week's EGEE User Forum, 2-6 March 2009, Catania, Italy. People will be able to listen to the reconstructed instrument and play it using a MIDI keyboard. The demonstration will also allow visitors to run real reconstruction on the grid. A professional musician will play ancient scores on the epigonion.

Adapted from materials provided by Enabling Grids for E-science (EGEE), via AlphaGalileo.

**Please visit the site:**

<http://www.sciencedaily.com/releases/2009/03/090305080734.htm>

## ΣΤΑ ΙΧΝΗ ΤΟΥ ΤΕΜΕΝΟΥΣ ΤΟΥ ΟΜΗΡΙΚΟΥ ΑΙΑΝΤΑ



Ο τύμβος που βρέθηκε στη μυκηναϊκή ακρόπολη της Σαλαμίνας.

### Τα Νέα

Στα ίχνη του τεμένους του Αίαντα- του ομηρικού ήρωα και βασιλιά της Σαλαμίνας- φαίνεται πως βρίσκεται η αρχαιολογική σκαπάνη, όπως αποκαλύπτει ένας τύμβος-αίνιγμα που βρέθηκε στην καρδιά του νεκροταφείου της μυκηναϊκής ακρόπολης του νησιού. Πρόκειται για έναν υπαίθριο χώρο λατρείας που «μπορεί προκαταρκτικώς και με κάθε επιφύλαξη να ταυτιστεί με το τέμενος Αίαντος», αποκάλυψε χθες ο υπεύθυνος της ανασκαφής, καθηγητής στο Πανεπιστήμιο Ιωαννίνων Γιάννος Λώλος, σε χθεσινή διάλεξή του στο Μουσείο Κυκλαδικής Τέχνης. Ο τύμβος αποτελεί αίνιγμα καθώς διαπιστώθηκε πως είναι κενοτάφιο (δεν έκρυβε δηλαδή στα σπλάγγνα του τάφους) παρά τον μνημειακό χαρακτήρα του. «Παρά το γεγονός της πλήρους απουσίας τάφων στο εσωτερικό του, ο τύμβος αυτός καθαυτός παρουσιάζει μείζον, εάν όχι μοναδικό, ενδιαφέρον», επισημαίνει ο Γ. Λώλος.

Έκπληξη όμως αποτελεί όχι μόνο η έλλειψη περιεχομένου του τύμβου, αλλά και δύο μεγάλα ορύγματα που είχαν ανοιχτεί από την αρχαιότητα στην κορυφή του. «Η παντελής απουσία περιεχομένων, και στις δύο περιπτώσεις, καθιστά την ερμηνεία τους δύσκολη», επισήμανε ο Γ. Λώλος. «Πρόκειται για ορύγματα προς παραπλάνηση τυμβωρύχων, ημιτελείς τάφους, συλημένα κενοτάφια ή βόθρους εναγισμών και προσφορών;», είναι το ερώτημα που θέτει.

Η απάντηση για την ταυτότητα του τύμβου δεν μπορεί να δοθεί προτού ολοκληρωθούν οι έρευνες, αλλά οι αρχαιολόγοι πιστεύουν πως κλειδιά για τη λύση θα αποτελέσουν τόσο το γειτονικό ελληνοιστικό τέμενος όσο και μια λιθόστρωτη εξέδρα που εκτιμάται πως «θα είχε κάποια ειδική λειτουργία, σχετιζόμενη ίσως με την πραγματοποίηση, από τους κατοίκους της ακρόπολης, λατρευτικών επισκέψεων και νεκρικών τελετών, επάνω και γύρω από τον τύμβο- Σήμα και πιθανόν, όπως εμφανίζεται τώρα, κενοτάφιο».

Πηγή: Τα Νέα, Μ.Αδαμοπούλου, 10/3/09

Επισκεφθείτε το δικτυακό τόπο:

<http://www.arxaiologia.gr/site/content.php?artid=4320>

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## **RESEARCHERS TO RESTORE EGYPTIAN MURALS, THE YOMIURI SHIMBUN**

OSAKA--A research institute for cultural properties will begin a study on the conservation and restoration of deteriorating ancient murals at the Saqqara ancient burial site near Cairo on March 21.

The Institute for Conservation and Restoration of Cultural Properties (ICP) aims to study techniques on the conservation and restoration of ancient murals worldwide.

The institute hopes to use the research findings at the ancient Egyptian site in the preservation of murals in Japan and in the arid zones of China and Central Asia.

The Cultural Affairs Agency expects the institute's research will benefit the preservation of Japanese cultural properties.

The institute, established in January, comprises 15 experts in the conservation science of cultural properties, geotechnical engineering and other fields from three universities in the nation, including Kansai University and Osaka Institute of Technology, and two research institutes in Egypt.

The experts include Kosuke Takatori, a visiting professor at Tokyo University of Agriculture who was involved in the preservation of endangered murals in the Kitora and Takamatsuzuka tombs in Asukamura, Nara Prefecture, and Prof. Masaaki Sawada of Kokushikan University, a former member of the Nara National Research Institute for Cultural Properties.

The ICP will clarify the causes of the deterioration of the ancient Egyptian murals at the Saqqara burial site, a UNESCO World Heritage Site, and study conservation and restoration techniques for five years.

The institute was established following the preservation efforts on the mastaba of Princess Idout (ca 2360 B.C.) at the Saqqara site, conducted in 2005 by Kansai University.

Vividly colored paintings decorated each of the mastaba's four walls, but only about one-third of the paintings remained intact. The university removed part of the paintings using similar methods employed at Kitora tomb and then returned them to the walls after reinforcing them.

The university completed the restoration work on the 10.5-meter by 3.2-meter painting on the west wall in September.

Motifs such as beer and bread are painted on the 4.5-meter by 3.2-meter south wall. However, because the mortar is only one millimeter thick, detaching the painting from the wall for preservation is difficult using the available technology.

The institute will spend two years developing preservation techniques for the south wall mural and will later analyze pigments and clarify painting techniques.

Prof. Hiroshi Suita, a specialist in Egyptology at Kansai University and head of the institute, said, "Preserving the mural paintings is difficult, and it tends to be given low priority in the overall preservation process of an archaeological site."

Please visit the site: <http://www.yomiuri.co.jp/dy/national/20090310TDY03104.htm>

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## **KEEPING THE GREAT SPHINX'S PAWS DRY**

Perhaps the single greatest threat to the preservation of Egypt's monuments is the rising level of underground water throughout the country. Runoff from sewage and agriculture, along with overall environmental changes, is resulting in the stone of temples and tombs that were dry most of the year in ancient times becoming saturated with water seeping up from below.

This weakens the architecture, and damages wall decorations. Rising groundwater is a problem faced not only by pharaonic monuments, but by Greco-Roman, Coptic, and Islamic period structures as well. Under my direction, the Supreme Council of Antiquities is working to reduce the groundwater level around antiquities sites throughout Egypt. We have completed a USAID-funded effort to de-water Karnak and Luxor temples, and work is underway in many other places. One of our greatest recent successes has been the development of a system to prevent the Great Sphinx at Giza from getting its paws wet!

It has been clear for some time that the groundwater level at Giza is rising. Pools were forming in front of the Valley Temple of Khafre, and people were worried that this might endanger the Sphinx and its temples as well. In early 2008, the SCA, in cooperation with Cairo University's Engineering Center for Archaeology and Environment, drilled four boreholes, each 4 inches in diameter and about 20 meters deep, into the bedrock at the base of the Sphinx. A camera lowered into each borehole allowed the engineers to examine the geological configuration of the plateau beneath the Sphinx. In addition, a small well called a piezometer was inserted into each borehole to monitor the underground water level. The investigation revealed that the water came up to about 15.6 meters above sea level, not an immediate threat to the statue, but cause for concern in the long term. I decided that it would be best to go ahead and address this threat before it could become more acute.

We investigated the possibilities for lowering the water level, and decided that the best way would be to put in a system of pumps in the area to the east of the Sphinx. A horseshoe-shaped arrangement of eight pumping stations was installed in front of the statue and its temples. Each of these stations allows a separate pump to whisk water away on a continuous basis. Every day, this system moves around 7,000 cubic meters of water, which is carried to the local drainage system.

Since June 21, 2008, when the system was activated, the groundwater level around the base of the Sphinx, which is monitored continuously by probes in piezometers, has dropped by almost a meter. The reduction is clearly visible in front of the Valley Temple of Khafre, where the pools have almost dried up. This is great news for the Sphinx! We are currently looking into the best way to block groundwater from seeping into the area in the first place, but in the meantime, the pumping system is keeping the Sphinx and its temples safe. I am very happy with the work done by the Cairo University team, which is led by Dr. Hafez Abdel-Azim and Dr. Reda Edammek. The SCA financed the entire project, and I am proud that this all-Egyptian effort has had such excellent results.

Finally, I would like for everyone to know that the cameras inserted into the boreholes at the base of the Sphinx did not reveal any evidence at all of hidden passages or secret chambers. There is no reason to believe that such structures exist, and I hope that this will help lay to rest speculation about lost civilizations and aliens at Giza.

Further information:

Protecting Egypt's Monuments from Groundwater:

<http://www.drhawass.com/blog/protecting-egypts-monuments-groundwater>

**Please visit the site: <http://www.drhawass.com/blog/keeping-great-sphinx%E2%80%99s-paws-dry>**

**[Go there for pix and diagrams.]**

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# **DROUGHT REVEALS IRAQI ARCHAEOLOGICAL TREASURES**

**BY LOURDES GARCIA-NAVARRO**

All Things Considered, March 20, 2009 · Iraq is suffering one of the worst droughts in decades. While this is bad news for farmers, it is good news for archaeologists in the country.

The receding waters of the Euphrates River have revealed ancient archaeological sites, some of which were unknown until now.

For Ratib Ali al-Kubaisi, the director of Anbar province's Antiquities Department, the drought has opened up a whole new land of opportunity.

He explains that civilization began in Anbar, next to the Euphrates River.

"Everyone ... thought that Anbar was only desert with no historical importance. But we discovered that this area is one of the most important archaeological areas in all of Iraq. This part of Iraq was the first to be settled," he says.

## Flooding Covers Sites

In the mid-1980s, Saddam Hussein's government dammed the Euphrates in the area, flooding a 120-mile-long stretch of land near Iraq's border with Syria.

What once was an enormous reservoir that stretched as far as the eye could see has shrunk an astonishing 90 percent since summer, officials say.

Ratib says that at least 75 archeological sites had been partially excavated before the area was flooded. They ran the gamut of civilizations — from 3,000 B.C. to the Sumerian and Roman periods.

Ancient Jewish settlements were also submerged in the area. But because of the receding waters, Ratib has been able to access some sites for the first time — including, for instance, a cliff with a series of pre-Christian tombs carved into its face. Though they have been heavily damaged by the water, Ratib says they still have value.

"I wish we could excavate these sites again. If we had the money and the resources, we could complete the work we began all those years ago," he says.

## Exciting New Finds

But it's not only previously discovered archaeological sites that the drought has made accessible.

Ratib and a colleague are suddenly excited by something they've seen on this particular day. They kneel next to what looks like an old stone wall, shards of pottery everywhere. Ratib says he believes it is a Roman-era irrigation ditch.

"I've never seen this site before," he says. "When we excavated this area decades ago, this was all buried underneath the soil, but the receding waters uncovered it."

#### Area Vulnerable To Looters

It's an unexpected discovery, but on the heels of their elation comes concern.

Ratib says he is worried the area will be looted. In all of Anbar, just 10 guards protect vulnerable archaeological sites.

"The area is rich with things. You can find jewelry, coins and documents — all these things are temptations for professional thieves," he says.

Or others who are just struggling to survive.

While the drought has been good for archaeologists, it has been terrible for the fishermen who rely on the Euphrates for their livelihood.

"The river level is very low, it's the lowest it has ever been that we can remember," says fisherman Sa'ad Naji. "It's frightening. The fishermen have no work anymore."

The river here is only about 3-to-4-feet deep. Sa'ad says strange structures now jut out of the water. He points to what looks like a stone arch that stands crumbling, lapped by muddy waves. He says those aren't the only things archeologists have discovered.

"About a year ago when the waters started to recede, these artifacts began to show up. We began looking around the area, and we found clay jars and old bones, coins and even some gold jewelry," he says.

For now, he says, the looting is confined to mostly local people who don't know the value of what they've taken.

#### Money Another Challenge

Back on shore, Ratib says excitedly he will ask Baghdad's central government for money to begin new excavations and to protect the sites.

"I will demand that we rescan the whole area. And if they have the budget, we will start work on it immediately," he says.

But he acknowledges there will probably not be enough money. If we can't excavate, he says ruefully, we can at least announce our new discoveries.

**Please visit the site:**

<http://www.npr.org/templates/story/story.php?storyId=102184336>

**{go there for pix and for audio report}**

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## **TURKEY'S AEGEAN EXPLORED IN** **UNDERWATER ARCHAEOLOGY** **EXCAVATIONS**

19 March 2009 | Archaeologists announced today they have begun underwater excavations of the prehistoric site of Limantepe in western Turkey.

The underwater research, headed by Professor Hayat Erkanal of the Archaeology Department of the Ankara University, explores the prehistoric settlement located in the coastal town of Urla near İzmir in western Turkey.

The harbour settlement was inhabited as early as starting from 6,000 years ago and, as such, it is one of the oldest known artificial harbours in the Aegean Sea. A big part of it, including a fortification wall, was submerged in the sea due to a massive earthquake which occurred in 700 BC, according to Erkanal.

Layers from three different periods have been found at Limantepe. The lowest layer belongs to the Early Bronze Age and dates from the third millennium BC onwards. The second one dates to the Middle Bronze Age from the first half of the second millennium BC onwards.

According to experts, evidence from these two early periods indicate cultural ties with the nearby prehistoric sites of Tepekule, Bayraklı within the city of İzmir and the Panaztepe site at the mouth of the River Gediz.

The third layer belongs to the Late Bronze Age and covers the time period from the fourteenth to the thirteenth century BC, with some artifacts discovered from this period suggesting a cultural proximity with the Mycenaean culture.

According to Erkanal, Limantepe was a major sea transportation centre with large political significant in the Aegean Region in 3000 BC.

Interest in the site grew in 2007 when a wooden anchor dating from the seventh century BC was discovered wedged in the sea ground during underwater explorations. It is said that it could be the oldest such anchor ever found.

The current excavations are being carried out with the support of experts and equipment from Israel's Haifa University.

**Please visit the site:** <http://www.balkantravellers.com/en/read/article/1099>

## **NEW TECHNOLOGY FOR DATING ANCIENT ROCK PAINTINGS**

ScienceDaily (Mar. 16, 2009) — A new dating method finally is allowing archaeologists to incorporate rock paintings — some of the most mysterious and personalized remnants of ancient cultures — into the tapestry of evidence used to study life in prehistoric times.

In the study, Marvin W. Rowe points out that rock paintings, or pictographs, are among the most difficult archaeological artifacts to date. They lack the high levels of organic material needed to assess a pictograph's age using radiocarbon dating, the standard archaeological technique for more than a half-century.

Rowe describes a new, highly sensitive dating method, called accelerator mass spectrometry, that requires only 0.05 milligrams of carbon (the weight of 50 specks of dust). That's much less than the several grams of carbon needed with radiocarbon dating.

The research included analyzing pictographs from numerous countries over a span of 15 years. It validates the method and allows rock painting to join bones, pottery and other artifacts that tell secrets of ancient societies, Rowe said. "Because of the prior lack of methods for dating rock art, archaeologists had almost completely ignored it before the 1990s," he explained. "But with the ability to obtain reliable radiocarbon dates on pictographs, archaeologists have now begun to incorporate rock art into a broader study that includes other cultural remains."

Journal reference:

1. Marvin W. Rowe. Radiocarbon Dating of Ancient Rock Paintings. Analytical Chemistry, 2009, 81 (5), pp 1728%u20131735, Online February 9, 2009 DOI: 10.1021/ac802555g

Adapted from materials provided by American Chemical Society.

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American Chemical Society (2009, March 16). New Technology For Dating Ancient Rock Paintings. ScienceDaily. Retrieved March 17, 2009, from <http://www.sciencedaily.com/releases/2009/03/090316093629.htm>

**Please visit the site:**

<http://www.sciencedaily.com/releases/2009/03/090316093629.htm>

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## **CLEOPATRA'S MOTHER 'WAS AFRICAN'**

Cleopatra, the last Egyptian Pharaoh, renowned for her beauty, was part African, says a BBC team which believes it has found her sister's tomb.

Queen Cleopatra was a descendant of Ptolemy, the Macedonian general who ruled Egypt after Alexander the Great.

But remains of the queen's sister Princess Arsinoe, found in Ephesus, Turkey, indicate that her mother had an "African" skeleton.

Experts have described the results as "a real sensation."

The discovery was made by Hilke Thuer of the Austrian Academy of Sciences.

"It is unique in the life of an archaeologist to find the tomb and the skeleton of a member of Ptolemaic dynasty," she said.

"That Arsinoe had an African mother is a real sensation which leads to a new insight on Cleopatra's family and the relationship of the sisters Cleopatra and Arsinoe."

They lived at a turbulent time when the Roman empire was extending its power across the Mediterranean.

Cleopatra established alliances with the Roman leader Julius Caesar and, after his assassination, with his political supporter, General Mark Antony, to whom she was married.

"Cleopatra, Julius Caesar, Mark Antony - they are all iconic figures from history," said archaeologist Neil Oliver who presents the BBC documentary.

"It's almost impossible to remember they were real people and not the semi-mythical figures portrayed by Richard Burton and Elizabeth Taylor. It was like a splash of cold water in the face to be confronted by them as human beings," he continued.

"When I stood in the lab and handled the bones of Cleopatra's blood sister - knowing that in her lifetime she touched Cleopatra and perhaps Julius Caesar and Mark Antony as well - I felt the hairs go up on the back of my neck."

"Suddenly these giant figures from history were flesh and blood," said archaeologist Neil Oliver.

There was plenty of sibling rivalry between Princess Arsinoe and her powerful sister Cleopatra - many believe the queen ordered Mark Anthony to murder her sister.

The film examines the life of Cleopatra - who had an affair with Julius Caesar - including her murderous intentions towards Arsinoe.

Please visit the site: [http://news.bbc.co.uk/2/hi/also\\_in\\_the\\_news/7945333.stm](http://news.bbc.co.uk/2/hi/also_in_the_news/7945333.stm)

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## **THE IDEAL MEASUREMENTS OF A PRE- ROMAN MODEL**

Metrological analysis of ancient houses reveals the use of standard models that were ingeniously adapted to suit individual situations.

Pre-Roman atrium houses exhibited a striking number of similarities as part of a long Italic building tradition. Dutch researcher Noor van Krimpen analysed the measurements of primary mansions in Pompeii. As buildings were constructed according to a standard model, the adaptations to that model, required by the economical, practical and social demands of any particular project, provide a lot of information about the social significance of the houses of Pompeii's elite.

Noor van Krimpen has added a new weapon to the archaeologist's arsenal; the metrological analysis. This was already used to find out more about the design aspects of historical constructions. Van Krimpen, however, has now also used the method to add to our knowledge of the social significance of the houses of Pompeii's elite. The main advantage of using metrological analysis is that it does not require further excavations and so the remains are kept intact.

### The ideal measurements

The elite in Pompeii had architects to design their houses. Van Krimpen has demonstrated that these architects worked according to geometric figures and proportions, expressed in arithmetic approximations, a well-known tradition of classical mathematics. This resulted in a number of standard sets of ratios that were used by architects in the design of houses.

Despite the fact that the atrium houses in Pompeii show a high degree of homogeneity – all having been splendidly built around a so-called atrium, an inner courtyard with or without a roof – the architect's skill and clients personal wishes ensured that each house retained an original character.

### Dress to impress

Van Krimpen used a metrological analysis to establish what the original design must have been before subsequently examining how the houses were adapted to the particular circumstances. The adaptations revealed how a client exerted his influence on a design and how each situation required a unique solution. The primary mansions were mainly intended to receive friends and other notable persons and so had to be designed accordingly.

The Pompeii elite tried to maintain the illusion of a perfect home.

The central symmetry was not solely maintained by juggling with the dimensions of the rooms. Van Krimpen even demonstrated how two neighbours had cooperated to outdo a third neighbour, one of the richest men in the city. They let their two houses be built behind a single facade so that their property appeared to be as big as that of their neighbour.

Van Krimpen investigated 18 primary mansions from Pompeii. Her research formed part of the broader project RUSPA (Ricerche Urbanistiche Su Pompei Antica) and was funded by NWO.

Please visit the site: [http://www.nwo.nl/nwohome.nsf/pages/NWOA\\_7NNGEJ\\_Eng](http://www.nwo.nl/nwohome.nsf/pages/NWOA_7NNGEJ_Eng)

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# **ROME'S TREMENDOUS TUNNEL, THE ANCIENT WORLD'S LONGEST UNDERGROUND AQUEDUCT**

**BY MATTHIAS SCHULZ**

Roman engineers chipped an aqueduct through more than 100 kilometers of stone to connect water to cities in the ancient province of Syria.

The monumental effort took more than a century, says the German researcher who discovered it.

When the Romans weren't busy conquering their enemies, they loved to waste massive quantities of water, which gurgled and bubbled throughout their cities. The engineers of the empire invented standardized lead pipes, aqueducts as high as fortresses, and water mains with 15 bars (217 pounds per square inch) of pressure.

In the capital alone there were thousands of fountains, drinking troughs and thermal baths. Rich senators refreshed themselves in private pools and decorated their gardens with cooling grottos. The result was a record daily consumption of over 500 liters of water per capita (Germans today use around 125 liters).

However, when the Roman legions marched into the barren region of Palestine, shortly before the birth of Christ, they had to forgo the usual splashing about, at least temporarily. It was simply too dry.

## **Not Enough Oxygen**

But that didn't stop the empire's clever engineers. They soon figured out a way to put things right. In the former Roman province of Syria (located in modern day Jordan), researchers are currently studying a sensational canal system. It extends mostly underground over a distance of 106 kilometers (66 miles).

The tunnel was discovered by Mathias Döring, a hydromechanics professor in Darmstadt, Germany. Treading on moss-covered steps, he squeezes his way into dark caverns plastered with waterproof mortar.

Greek letters are emblazoned on the walls, and bats dart through the air. "Sometimes we have to stop working -- there isn't enough oxygen," says the project director.

Qanat Firaun, "Canal of the Pharaohs," is what the locals call the weathered old pipeline. There are even rumors that gold is hidden in the underground passageways that run up to 80 meters (262 feet) below the surface.

Döring has found a better explanation. It turns out the aqueduct is of Roman origin. It begins in an ancient swamp in Syria, which has long since dried out, and extends for 64

kilometers on the surface before it disappears into three tunnels, with lengths of 1, 11 and 94 kilometers. The longest previously known underground water channel of the antique world -- in Bologna -- is only 19 kilometers long.

"Amazing" is the word that the researcher uses to describe the achievement of the construction crews, who were most likely legionnaires. The soldiers chiseled over 600,000 cubic meters of stone from the ground -- or the equivalent of one-quarter of the Great Pyramid of Cheops. This colossal waterworks project supplied the great cities of the "Decapolis" -- a league originally consisting of 10 ancient communities -- with spring water. The aqueduct ended in Gadara, a city with a population of approximately 50,000. According to the Bible, this is where Jesus exorcized demons and chased them into a herd of pigs.

### **The Height of Its Glory**

Döring will return to the site with his students in April to further explore this underworld. Every morning the group heads out into the barren landscape armed with theodolites -- instruments used for measuring angles of incline -- and GPS devices. They are looking for new entrances that lead to the hidden labyrinth. A dilapidated old farmhouse, located in the midst of the ruins of ancient Gadara, serves as an excavation camp, high above Lake Genezareth.

### **How the aqueduct worked. DER SPIEGEL**

#### **How the aqueduct worked.**

The massive undertaking was launched around the year 90 A.D. -- that much is clear. Emperor Domitian ruled in Rome and the empire was at the height of its glory. Frontinus, Rome's water commissioner, was in charge of nine aqueducts built on towering stone arches. He even pumped water free of charge into the cellar of the Coliseum.

The Levant was also experiencing an enormous boom thanks to trade with the Orient. The people of Rome wanted to see tigers. A tame lion prowled around Domitian's throne. Rich senators savored spices from India and wore silk from China. Whoever could afford it burned copious quantities of frankincense and purchased beautiful slaves from Arabia.

The desert trade flourished accordingly. Dust-covered caravans thronged the gates of Gadara and camels stood at the troughs. The Romans built two theaters in the city. Even a temple to the nymphs was planned, with fountains and a 22-meter-long basin.

Local springs, though, did not produce enough water to fulfill such luxurious demands. Soon the region was suffering from water shortages.

So the city administration decided in favor of an unprecedented tour de force. It seems they tapped a river deep in the backcountry, near Dille in modern day Syria. The water was then routed through a trough made of Roman concrete, the famed "opus caementicium."

### **Bridging a Chasm**

This channel was covered with slabs to protect it against animals, bird excrement and dust. This also kept out the light, which stopped the growth of algae. The pipeline inclined only slightly as it cut across the Syrian high plateau. Hundreds of cement mixers toiled under the hot sun. Finally, they reached the first city, Adraa.

But then their way was blocked by the mountainous country of northern Jordan, a chain of flat-topped peaks, surrounded by steep gorges. The very first obstacle, the Wadi al-Shalal, is a 200-meter deep gash carved into the landscape. No Roman master builder could have ever bridged this chasm. What to do now?

First, the engineers swerved to the left and ran the aqueduct along the mountainside to the south. Since the rough terrain made it virtually impossible to extend the route over the surface, however, they carved an underground channel through the rocky mountain face. This continued for 11 kilometers.

Finally, the desert valley was narrow enough that the gap could be bridged with a single bold construction. Even today the blocks of stone from this structure lie at the bottom of the ravine.

Beyond this canyon, the terrain became even more grueling with a seemingly endless succession of hills and steep slopes. Facing similar topography near Carthage, the Romans had routed water 19 kilometers across huge walls and stone arches.

**How Did the Romans Accomplish Such a Feat?**

This time the empire pursued an even more ambitious goal. It aimed to place the remaining route underground. That dispensed with the need for bridges. Below the surface, laborers could simply chisel the floor of the tunnel out of rock.

But the project faced daunting hurdles. The compass was unknown in the ancient world. How were they to orient themselves within the mountain?

And how to provide adequate ventilation inside the tunnels? After only a few meters, workers would have had trouble breathing in the dusty passageways.

And there were other challenges: With an average height of 2.5 meters (8 feet) and a width of 1.5 meters, only four legionnaires working underground could ensure the advance of the tunnel. They couldn't manage more than 10 centimeters (4 inches) a day. At that rate, they would still be tunneling toward Gadara today.

Surveyors, water engineers and mining experts traveled farther east to find solutions to these problems. Döring has largely deciphered their working methods. "There are many indications that the engineers first traced the surface route and then sank sloping shafts into the rock every 20 to 200 meters," he says. These shafts provided fresh air.

What's more, they meant that hundreds of men could work simultaneously on the endeavor.

## **Dead Chickens**

When Emperor Hadrian visited the Decapolis in the 129 B.C., the project was in full swing. To the sound of trumpets the legionnaires and local workers lined up and climbed

underground. They labored with pointed chisels in the glow of oil lamps. Slaves hauled the excavated material up the shafts.

Nowadays, the old service entrances make it possible to determine the course taken by the underground water labyrinth. "Nearly all entrances were walled up in ancient times to prevent animals from falling in," explains Döring, "and we found others buried or filled with meters of rubbish." Dead chickens lay in one hole.

### **How the aqueduct worked. DER SPIEGEL**

#### **How the aqueduct worked.**

Like mountain climbers, with one hand on a safety rope, the professor and his helmeted students make their way down the steep steps, which descend at 50-degree angle. With each step it becomes more slippery.

Down below, on the floor of the tunnel, the researchers are surrounded by damp darkness. At times it is so suffocating that the gas monitoring devices begin to peep. Rubble occasionally blocks the passage, creating hip-high ponds of mud and rainwater. In other places, the wind whistles and blows like in a wind tunnel.

The group has unearthed over 300 entranceways. But there remain many unanswered questions. "Over the first 60 kilometers, the tunnel has a gradient of 0.3 per thousand," explains the project director. That works out to 30 centimeters per kilometer -- an astonishingly shallow angle of descent.

#### **Down to the Last Centimeter**

The Romans did have levels, a six-meter long design called a chorobate copied from the Persians. They also filled goat intestines with water to find a level around corners. But that alone does not explain the precision of this amazing aqueduct.

"First the surveyors had to establish a uniform route with posts that extended for many kilometers," Döring points out. That alone was extremely difficult on the uneven terrain. Then they had to transfer this line deep below the surface and determine the location of the tunnel floor down to the very last centimeter. But how did they accomplish this with such a high degree of precision? It wasn't possible to lower a plumb line because the construction shafts descended at an angle.

In view of such difficulties, it's hardly surprising that mistakes were made. Once in a while, the chiseling crews would hammer right past each other. In such cases, the only way to connect the sections was to send tapping signals through the rock and zigzag until the workers met up.

It took 120 years to complete the subterranean enterprise. Then the water finally gushed and bubbled from below. Mineral deposits in one section near Abila reveal that 300 to 700 liters per second rushed through the canal. The genius of Rome had managed to transform this part of the Levant into a veritable Garden of Eden.

And yet there was an overwhelming sense of disappointment in Gadara. Even the mega-aqueduct in Jordan attests to the tragic truth that nothing created by the hand of man is ever perfect. The original plan called for the water to fill a high stone reservoir that would feed the city's fountains and the planned temple to the nymphs.

But that never happened. Since the surveyors ended up making a number of miscalculations, the water -- after over 170 kilometers -- arrived in Gadara slightly too low for the grand plans.

The reservoir could not be filled -- and the fountains never went into operation.

Translated from the German by Paul Cohen

**Please visit the site:**

**<http://www.spiegel.de/international/world/0,1518,612718,00.html>**

**[Go there for figures.]**

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## **4 STATUES DATING BACK TO 2ND CENTURY AD UNCOVERED IN PALMYRA**

Palmyra, (SANA) – The National Excavation and Restoration Expedition uncovered four limestone statues during excavations in a buried cemetery within a private real-estate property in the Palmyra oasis.

Two of the statues depict women clad in traditional Palmyran attire consisting of cloaks, long gowns and turban. The other two statues depict men, one of them with a young girl standing by him.

The Director of Palmyra Archeology and Museums said the statues are 60 cm high and 50 cm wide, and date back to the 2nd century AD. The statues have been moved to Palmyra National Museum.

H. Sabbagh / A. N. Idelbi

Please visit the site: <http://www.sana.sy/eng/35/2009/03/11/216618.htm>

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# **FOR BERLIN MUSEUM, A MODERN MAKEOVER THAT DOESN'T DENY THE WOUNDS OF WAR**

**BY MICHAEL KIMMELMAN**

BERLIN — The Neues Museum briefly reopened here last weekend (was reborn, seems more like it), and local newspapers reported that more than 35,000 Berliners, many of them waiting hours in the cold in lines stretching nearly half a mile, filed into the still empty building over three days to see it.

The art that will go inside (Egyptian and pre- and early history, as in the prewar years) won't be installed until the fall. This little preview was cooked up as a kind of civic ceremony. There was a ritual turning over of keys to the Prussian Cultural Heritage Foundation, an occasion when the building could speak for itself.

And it does, poetically, and not just for itself. It's at the heart of the so-called Museum Island, a complex at the center of the city, which the Prussian king Friedrich Wilhelm IV in the 19th century conceived as a public sanctuary of culture and learning, a modern Acropolis. The Neues Museum opened in 1855 as the island's "focal point," in the words of the building's architect, Friedrich August Stüler; and with its displays of art and archeology, it was meant to cultivate, as he put it, "the most elevated interests of the people."

But, typical of Berlin, a city forever on the verge of greatness but never quite becoming the glorious megalopolis it dreams of being, only in 1930 did the last of the Museum Island buildings, the current Pergamon Museum, finally open. Then nine years later the whole complex had to be shut down with the onset of the war. Nine years and out.

The Neues Museum suffered more than any other structure there from Allied bombs dropped in 1943 and 1945. (This is not to mention the destruction to the art in it that was too large to be moved out for safekeeping.) For decades afterward the museum simply lay in shambles, exposed to the elements, neglected by the former Communist East Berlin to which Museum Island belonged.

Its revival now, at a cost of some \$255 million, testifies among other things to the civic virtues of dogged perseverance, and as such the building is something of a cautionary tale too. In its tortured and conflicted efforts at urban renewal, Berlin these days often seems to wish both that the worst parts of its past could be erased and that better ones could be magically summoned back to life: as if the city might be returned to what it was in, say, 1928.

But the past persists, as a burden or opportunity, depending on one's perspective, more so here than perhaps anywhere else in Europe. David Chipperfield, the London architect in charge of resuscitating the Neues Museum, recognized this truism and turned burden into

opportunity. His renovation, an 11-year effort (ordeal is perhaps the more apt word at this point), began from the unobvious and instantly disputed proposition that a “Piranesian pile,” as he called the vivid jumble of remains, could yet be put back together. The undertaking would be the world’s biggest-ever Humpty Dumpty project.

All usable scraps and remnants of the original, countless thousands of pieces, big and small, including even bullet holes (if they weren’t too big), were to be incorporated into the building, as Mr. Chipperfield and his team saw fit. Every wall, floor, lintel, column, frieze, mosaic and ceiling was treated as part of this vast jigsaw puzzle. The process, Mr. Chipperfield has repeatedly said, entailed “millions of decisions,” technical, aesthetic and political.

Where no pieces of the original survived, new spaces were invented along the lines of Stüler’s original. The whole northwest wing of the building, for example, had been destroyed by the air raids; much of the southern end, including one magnificent gallery with a soaring cupola, now reinvented in ingeniously modern terms by Mr. Chipperfield, was demolished by the East Germans when they undertook an aborted renovation not long before the Wall fell. And the colossal stairwell, the centerpiece of the building, modeled after a plan by Stüler’s great teacher, the neo-Classicist Karl Friedrich Schinkel, was left an empty shell by the bombardments.

Reconceiving these and other gaps, Mr. Chipperfield copied the original proportions of Stüler’s rooms, which are beautiful, and also stuck with Stüler’s idiosyncratic but elegant layout, which appears symmetrical but isn’t. The goal was to come up with a satisfying visual whole that would remain everywhere legible and honest. Honest in that the new parts should look clearly new, the old, old, while the two go together gracefully. Concrete, wood, metal and recycled bricks, often covered with slurry so the original fragments blend more seamlessly in with what’s new, provide a subtle, muted palette for the modern interventions.

What results isn’t a Peter Brook-like Bouffes du Nord, the Paris theater: it isn’t shabby chic, or what German critics of this project have taken to calling “ruin nostalgia.”

It’s not the Gedächtniskirche, either, the so-called “hollow tooth” Memorial Church in West Berlin, bombed during the war, now preserved as an immense admonitory ruin, towering over one end of the city, laying entirely bare the evidence of its history.

Mr. Chipperfield’s museum is instead a modern building that inhabits the ghost of an old one. It’s a patchwork of vestigial shards, whose organization is the consequence of all those millions of decisions — decisions that in one respect should never have been the responsibility of any architect, since in this city historic preservation, especially with such freighted monuments, is always a matter of German responsibility and national identity, no less than a matter of esthetics.

But Mr. Chipperfield’s museum looks so beautiful and is so eloquent that it short-circuits doubt and criticism. Germans who complained over the years about “ruin nostalgia” (they were the real nostalgists) said that the country, by association with such a symbolic site, shouldn’t continue to be held hostage to the worst episode in German history. Better, they argued, rebuild the Neues Museum as it originally looked, from scratch, without all the bullet holes and rotting columns, along the lines of the fake 18th-century

Hohenzollern Stadtschloss on Unter den Linden, the city's central boulevard not far away, which, if Germany ever comes up with the nearly \$1 billion the building will cost, is now on the drawing board.

Maybe with the success of the Neues Museum, which will open officially on Oct. 16, the Schloss supporters will reconsider that misguided plan. Meanwhile, from the slender bow-string iron trusses, lovingly restored in the upper-story galleries, to the marbled floor in the octagonal room where the famous head of Nefertiti (now on view in Schinkel's Altes museum next door) will be installed, and even to the new concrete galleries whose simplicity is itself a revelation, the new Neues Museum offers a variety of small technological and visual marvels that speak, as Stüler intended, to the benefits of keeping an open mind.

As for the grand central stairway, now under a basilica roof, it rises between bare brick walls toward towering windows, toward the light, then doubles back to lead upward again to more windows, more light. The concrete and dark-beam design reinvents Stüler's original concept, which becomes a kind of chrysalis out of which now emerges a new, modern grandeur. The space is a metaphor, you might say, for Germany today, which surely Stüler would also have appreciated.

Even the 19th-century frescoes by Wilhelm von Kaulbach, which once traced the progress of man from the Tower of Babel to the glory of Prussia, persist as small fragments embedded high up in the brick, like half-recalled dreams come to life. In such ways the Neues Museum isn't Lazarus exactly, but it's almost a miracle. And with it Berlin has one of the finest public buildings in Europe.

**Please visit the site:**

[http://www.nytimes.com/2009/03/12/arts/design/12abroad.html?\\_r=1&scp=1&sq=newes&st=cse](http://www.nytimes.com/2009/03/12/arts/design/12abroad.html?_r=1&scp=1&sq=newes&st=cse)

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## **BURGUNDY WINE HAS LONG HISTORY** **IN FRANCE: REMAINS OF GALLO-** **ROMAN VINEYARD DISCOVERED IN** **GEVREY-CHAMBERTIN**

ScienceDaily (Mar. 10, 2009) — Gevrey-Chambertin, 12 km from Dijon, is famous throughout the world for its Burgundy wines. It is now possible to conclude that winegrowing in this region goes back to the Gallo-Roman era, as testified by the findings of excavations by the Institut National de Recherches Archéologiques Préventives (INRAP), at the spot known as "Au dessus de Bergis".

Carried out in collaboration with scientists from the ARTeHIS Laboratory (CNRS/Ministère de la Culture et de la Communication/Université de Bourgogne), the archeological dig revealed

316 rectangular pits aligned in 26 rows, interpreted as being the remains of a vineyard from the first century AD.

Commissioned by the French Government (DRAC Bourgogne), excavations covering nearly 12,000 m<sup>2</sup> were completed during the summer of 2008 before building work started to enlarge a housing estate planned by Gevrey-Chambertin town council. The dig, divided into two sectors, revealed a series of hollow remains (pits, pot-holes and ditches) from different periods. For the Gallo-Roman era, an area of more than 6000 m<sup>2</sup> was covered by more than 300, regularly spaced and aligned pits, surrounded by a continuous peripheral ditch. These rectangular pits are 90 to 130 cm long by a little less than 60 cm wide, and sections of the soil filling them indicate the void left by the trunk and roots of a small shrub. Many of the pits are split into two compartments by a small ridge of rubble and soil.

How can these remains be interpreted? The alignment and rectangular shape of the pits are similar to those found at the sites of other Gallo-Roman vineyards discovered in both southern France, the region around Paris and in the UK. The small dimensions of the pits mean that the hypothesis of an orchard can be excluded. The "ghosts" of small shrubs observed in the filing earth are of the size of a vine stock.

The two compartments separated by a ridge correspond to the recommendations of Pliny the Elder and Columella, two 1st century Latin authors, which were to plant two vine stocks in each pit and arrange them "so that the roots of the two layers in the same pit do not twist around each other, which will be easy to do by placing rocks no heavier than five pounds in the bottom of the pits, transversally and across the middle." These pits are the first example how these viticultural and agronomic precepts were applied in Gaul. Some pits are edged by smaller, more shallow ditches. The secondary ditches probably served for provining, an ancient technique for the vegetative propagation of vines, when the above-ground part of the plant (stem, branches, etc.) was buried so that it developed its own roots before being separated from the parent plant and living as a new, independent individual.

How can we date these remains? Vines planted in rows are characteristic of Antiquity (and of the 20th century, but old land registers contain no trace of recent vineyards). Not only do these pits closely resemble those in other Gallo-Roman vineyards, but the spacing within rows, and the distances between rows, are multiples of the Roman foot (29.6 centimeters). The excavations showed that the pits were dug in ancient soil (from the Neolithic to the protohistoric periods), at a time that can thus be situated after the Gallic period.

According to the fragments of pottery found in the pits, they probably date from the 1st century AD.

These pits in Gevrey-Chambertin are the first traces of Gallo-Roman vineyards to have been discovered in Burgundy. They are surrounded by numerous archaeological remains from the same period: villas, houses and graves, in the eastern part of the town and close to this site.

They confirm interest during Antiquity for vines and wine in the region, although this was already known from numerous objects already

found: a horn of plenty containing a bunch of grapes and belonging to one of the divinities of the shrines at the source of the Seine, the monument to the wine merchant from Til-Châtel, the gravestone of a couple of vineyard owners from Tart-le-Haut (the man carrying a bill-hook), the God with a barrel from Mâlain, etc. All these objects are on display in the Musée Archéologique in Dijon. The pits in Gevrey-Chambertin also confirm that vines were grown on plains at that time (as found at the other known sites), while slopes are preferred today for the production of good wine.

Archeologists working on this dig also revealed a Neolithic II lowland house (dated at between 4000 and 3500 BC) and the remains of a Neolithic III house (3500-3000 BC), which are rarities in the open plains of this region and provided confirmation of its Neolithic II and III chronology. From the Early Bronze Age, a farm and its outbuildings (2300 to 1650 BC), one of the southernmost buildings of this type, was excavated, together with a farm from the Late Bronze Age (1000 to 900 BC). And a house from the beginning of the Second Iron Age (450-350 BC) filled a gap in the documented records for this period in Burgundy.

**Please visit the site:**

<http://www.sciencedaily.com/releases/2009/03/090310084846.htm>

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## **NEW TREASURE JOINS HERCULANEUM SHOW, MAJOR EXHIBITION EXPLORES LIFE IN ANCIENT ROMAN TOWN**

(ANSA) - Naples, March 17 - A new treasure from Herculaneum was unveiled in Naples on Tuesday, where it will join a major exhibition exploring life in the Ancient Roman town buried by Vesuvius in 79 AD.

The show, running until April 13, already features over 150 artefacts and human remains uncovered over the last three centuries but the new relief, uncovered by accident last month, is stirring fresh interest.

The marble sculpture, dating back to the 1st century AD, apparently depicts two separate scenes centred on Dionysius, the Greek counterpart of Ancient Rome's god of wine and merrymaking, Bacchus.

"The relief is particularly fascinating for scholars as we are not yet certain exactly the tale that is being reproduced on the work,"

explained Herculaneum's excavation chief Maria Paola Guidobaldi.

"It almost certainly shows Dionysius and what appears to be one of his female followers, a Maenad, dancing. However, there are also two other figures, one with men's hair and the other wearing female clothes that aren't yet clear.

"Nor are we certain what gift is being offered to Dionysius. It was very probably some kind of offering, perhaps a thanksgiving, much as people make today to patron saints". The Greek marble relief was uncovered by accident in Herculaneum on February 18, during regular maintenance work.

It was located in a luxurious residential building on the northwest block of the town, which has only been partly excavated so far. The relief was fixed in the eastern wall of a large room, at about two metres above the ground. It appears to have been designed as a partner for another relief, located at the same level on the southern wall of the room, which was removed in 1997. "The find is particularly important owing to the interpretation of the scene it shows, which is still an open question," said Pompeii Superintendent Pietro Giovanni Guzzo. "So far no one has been able to find a connection between the two separate scenes dividing the relief, the dancer and the homage to Dionysius".

The show is already hosting dozens of statues, skeletons, artefacts and textiles from the small seaside town south of Naples, which was destroyed in the same eruption that buried Pompeii on August 24, 79 AD.

While Pompeii was covered by hot ash and lava, its less famous neighbour disappeared under an avalanche of molten rock. This mingled with mud and earth and solidified, allowing fragile organic matter like wood, fabrics, wax tablets and papyrus rolls to survive.

Archaeologists began digging at the site at the start of the 1700s and continue to make discoveries today.

The exhibition is divided into three sections, focusing first on the magnificent statues of gods, heroes and emperors found among the ruins. The second section is dedicated to noble Herculaneum families such as that of the proconsul Marcus Nonius Balbus, one of the town's main benefactors, and also showcases many statues found at Herculaneum's largest residence, the Villa of the Papyri.

In the third section, the skeletons of fleeing townspeople are on show alongside everyday objects giving visitors an insight into the daily life of common people.

While bodies in Pompeii decomposed in the ash, Herculaneum's solidified mud preserved the skeletons intact, providing researchers with an extremely rare opportunity to examine remains of Ancient Romans, who usually cremated their dead.

The exhibition also includes an additional section at the end devoted entirely to Herculaneum's fabrics, which, like the townspeople, have been preserved in astonishing condition thanks to the sudden avalanche of molten rock at extremely high temperatures. Herculaneum: Three Centuries of Discoveries runs at the Naples Archaeological Museum until April 13.

**Please visit the site:**

[http://www.ansa.it/site/notizie/awnplus/english/news/2009-03-17\\_117334922.html](http://www.ansa.it/site/notizie/awnplus/english/news/2009-03-17_117334922.html)

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## **DIGGING CHANGE**

**BY LAWRENCE GOODMAN**

Could computers eventually replace shovels in archaeological research?

At least one Brown researcher thinks they might.

Courtesy Katharina Galor

To prove it she's taking on the Crusader Castle, one of the world's most endangered archaeological sites. For decades, archaeologists have puzzled over what the Castle, which overlooks the Mediterranean Sea from high atop a cliff along the central coast of Israel, might have looked like. Built in the mid-1200s by the Crusaders after their conquest of the Holy Land, it was sacked a few decades later by Egyptian Mamluks, who had their captives demolish the structure. The 6,500-square-foot stone fortress lay in ruins.

In 1950 Israeli archaeologists began excavating the castle and the surrounding medieval city. After thirty years of work, they had produced a model that was still 70 percent conjecture.

Now archaeologist Katharina Galor '96 PhD thinks that in a mere four years she can put together a model of the entire site that is only 20 percent conjecture. "We really hope that this is going to forever change the field of archaeology," she says.

Galor's ace in the hole is technology. For the past 100 years archaeological fieldwork has meant digging and sifting through dirt, looking for remains, and then meticulously recording where the item was found and what it looks like. Galor says working through a typical twelve-foot-by-twelve-foot area can generate up to fifty sheets of paper and fifty photos, all of which need to be catalogued, analyzed, and passed on to an architect or surveyor, who then tries to assemble a model of the area.

"It's very labor intensive," says Galor, an adjunct assistant professor of Judaic studies. Digs can take years and years and can become incredibly expensive.

But working with engineers and computer scientists, Galor has devised a way for computers to handle most of these chores. Starting this summer, Brown engineers David Cooper, Benjamin Kimia, and Gabriel Taubin '91 PhD will join her and researchers from Israel and the University of North Carolina to position several digital video cameras around the site where they are digging. Every time someone from the team finds anything, from a pottery shard to a piece of wall, the scientist will direct a signal to the camera. Computers will later analyze the film, marking the moment when the signal was received and where the investigator was standing—essentially doing all the work archaeologists used to have to do by hand.

Stage 2 involves using a scanner to create digital images of all the objects found. The scanner in this case is a tripod-mounted, video-camera-shaped device that can direct a laser in any direction to document the remnants of the Castle from every angle.



dig2.jpg

Galor, in red, working in Israel.

Once these images are stored in memory, the computer can precisely measure every object's contours and begin figuring out how they might all fit together. Experts will still be needed to guide the computer in the right direction and review its progress, but much of the grunt work will be gone. So will a lot of fruitless speculation, as the computer's mastery of the data should allow it to identify theoretical dead ends. If a gap remains and the piece that fills it is later found, the computer will be ready to update its model.

None of this research, which is funded by a four-year \$2.6 million National Science Foundation grant, has required the development of new technology. Rather it involves taking technology that Brown engineers have earlier developed and applying it to archaeology.

"There will be a lot of experimentation and adjusting," Galor says, "which we hope will result in some kind of user-friendly technology that archaeologists will want to use in the future. For archaeology, this is a dream come true."

**Please visit the site:**

**[http://www.brownumnimagazine.com/under\\_the\\_elms/digging\\_change\\_2204.html](http://www.brownumnimagazine.com/under_the_elms/digging_change_2204.html)**

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## **GREEK FISHERMAN NETS 2,200-YEAR- OLD BRONZE STATUE**

ATHENS, Greece - A Greek fisherman must have been expecting a monster of a catch when he brought up his nets in the Aegean Sea last week. Instead, Greek authorities say his haul was a section of a 2,200-year-old bronze statue of a horseman.

A Culture Ministry announcement said Monday the accidental find was made in waters between the eastern islands of Kos and Kalymnos. The fisherman handed over the corroded metal figure to authorities, who have started the cleaning process.

Dating to the late 2nd century B.C., the statue represented a male rider wearing ornate breast armor over a short tunic and armed with a sheathed sword. The trunk of the horseman and his raised right arm have survived.

Please visit the site: <http://www.newsobserver.com/1635/story/1454954.html>

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## **ANCIENT PELLA WORKSHOP** **DISCOVERED**

A recently excavated ceramics workshop has yielded a plethora of information concerning the economic activities of Hellenistic-era Pella, one of the most significant sites in the ancient kingdom of Macedon, according to archaeologists in Thessaloniki on Monday, who spoke during a presentation of artifacts and findings.

The workshop, unearthed by archaeologists of the culture ministry's 17th directorate of prehistoric and classical studies, was discovered north of the new entrance of the Pella archaeological site.

It is believed to have been in operation between the final quarter of the 4th century BC and 200 BC.

A plumbing system used to clean the potter's clay is among the most notable findings, while a furnace and storage areas were also uncovered.

Movable artifacts include pottery casts, vessels, fragments of statuettes and silver and bronze coins.

**Please visit the site:**

<http://www.anamuseum.gr/anaweb/user/showplain?maindoc=7456937&maindocimg=7456548&service=98>

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## **ARCHAEOLOGIST: OLDEST CYPRUS** **TEMPLE DISCOVERED, THE** **ASSOCIATED PRESS**

NICOSIA, Cyprus: An Italian archaeologist claimed Friday to have discovered Cyprus' oldest religious site, which she said echoes descriptions in the Bible of temples in ancient Palestine.

Maria Rosaria Belgiorno said the 4,000-year-old triangular temple predates any other found on the east Mediterranean island by a millennium.

"For sure it's the most ancient religious site on the island," she told The Associated Press from her home in Rome. "This confirms that religious worship in Cyprus began much earlier than previously believed."

But authorities on the island say they cannot confirm her claim before further study.

"That the site is dated to around 2,000 B.C. is certain, but the interpretation that it's a temple or a sacred site has yet to be confirmed," Cyprus Antiquities Department official Maria Hadjicosti told state radio.

The 200-sq.-meter (2,150-sq.-foot) building was discovered last year outside Pyrgos, a village near the south coast, where previous digs unearthed a settlement dating to 2,000 B.C. that included a perfumery, winery and a metal workshop.

Belgiorno, who heads an Italian archaeological mission in Cyprus, initially disclosed the find to English-language The Cyprus Weekly.

She said evidence points to a monotheistic temple with a sacrificial altar that resembles Canaanite places of worship described in the Bible.

"The temple has a very peculiar shape for a building, which is very rare."

Belgiorno said a key piece of evidence linking the site to Biblical accounts of temples in ancient Palestine is a pair of 6-meter (20-foot) stone "channels" extending from either side of the altar that allowed sacrificial animals' blood to flow out of the structure.

Other evidence includes a stone water basin, which she said might have been used in the ritual cleansing of the channels.

Belgiorno said the temple was situated across from the industrial area in the heart of the settlement, which she estimates covered 35 hectares (86 acres). Most of the settlement now lies under village homes and holiday villas.

The industrial area was built around a large mill producing olive oil that was used as fuel to fire up the metal workshop and as a perfume base.

Although it is difficult to say with certainty, she said the settlement was home to around 500 people. Their origins are unclear, but they had trade links with ancient Egypt and Palestine, she said.

A major earthquake destroyed the settlement in 1,850 B.C.

The earliest settlements excavated so far on the island date back to around 9000 B.C. Cyprus then saw successive waves of colonization, including Phoenicians, Mycenaean Greeks, Romans and — in the Middle Ages — Franks and Venetians. It was conquered by Ottoman Turks in 1571, and became part of the British Empire in 1878 before winning independence in 1960.

Violence between Cyprus' majority Greek community and the Turkish community broke out shortly after, and the island has been divided along ethnic lines since a Turkish invasion in 1974 — prompted by a failed coup aimed at union with Greece.

**Please visit the site: <http://www.iht.com/articles/ap/2009/03/27/europe/EU-Cyprus-Ancient-Temple.php>**

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## **IRONWARE PIECE UNEARTHED FROM TURKEY FOUND TO BE OLDEST STEEL**

Tokyo (PTI): A piece of ironware excavated from a Turkish archaeological site is about 4,000 years old, making it the world's oldest steel, Japanese archaeologists said on Thursday.

Archaeologists from the Middle Eastern Culture Center in Japan excavated the 5-centimetre piece at the Kaman-Kalehoyuk archaeological site in Turkey, about 100 kilometers southeast of Ankara, in 2000. The ironware piece is believed to be a part of a knife from a stratum about 4,000 years old, or 2100-1950 B.C., according to them.

An analysis at the Iwate Prefectural Museum in Morioka showed that the ironware piece was about 200 years older than one that was excavated from the same site in 1994 and was believed to be the oldest steel so far made in 20th-18th centuries B.C.

The ironware is highly likely to have been produced near the Kaman-Kalehoyuk site as a 2-cm-diameter slag and two iron-containing stones have also been excavated, Kyodo news agency quoted the archaeologists as saying.

Hideo Akanuma, an archaeologist at the Iwate Prefectural Museum, said the fresh finding led to a change in the history of iron and steel production, noting that such production was earlier thought to have begun in the Hittite kingdom dating in the 14th to 12th centuries B.C.

**Please visit the site: <http://www.hindu.com/thehindu/holnus/001200903261611.htm>**

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