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Πληροφοριακό Δελτίο της Ελληνικής Αρχαιομετρικής Εταιρείας

- Μάιος 2012 -

“The greater the difficulty, the more the glory in surmounting it.”

Epicurus (Greek philosopher, BC 341-270)

Newsletter of the Hellenic Society of Archaeometry

- May 2012 -

Nr. 134

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ΣΥΝΕΔΡΙΑ - CONFERENCES/WORKSHOPS

ANNUAL VISITING SCHOLAR CONFERENCE 2012, APPROACHING MONUMENTALITY IN THE ARCHAEOLOGICAL RECORD, 12-13 MAY, BUFFALO, NY

The Institute of European and Mediterranean Archaeology at SUNY Buffalo invited you to attend our annual visiting scholar conference for 2012, Approaching Monumentality in the Archaeological Record, taking place the weekend of 12-13 May 2012 in Buffalo, NY

The building of sculpted monuments and monumental architecture seems to be a universal human trait at all levels of social complexity and in all parts of the world from the grand pyramids of ancient Egypt to the modest inuksuit cairns of the Inuit. Unfortunately, the words 'monumental' and 'monumentality' as used by scholars have different meaning and intent in nearly every work in which they appear. This symposium seeks to clarify just what we mean by 'monumentality' and more than that, to understand the social and political significance of monumentality as it was manifested in various ways around the world. Approaching Monumentality brings together archaeologists, art historians, epigraphers, historians and architects, whose areas of expertise span from the Neolithic to the Classical era, and from Europe and the Mediterranean basin to the New World. In this way we will be able to explore monumentality both as a general human phenomenon as well as in its rich and varied particular social contexts,

The conference is open to the public. Please visit: <http://www.iema.buffalo.edu/conference/> for registration and program information or contact the conference organizer, James F. Osborne (jamesosb@buffalo.edu)

**IIC CONGRESS 2012, THE DECORATIVE:
CONSERVATION AND THE APPLIED ARTS,
10-14 SEPTEMBER, INTERNATIONAL
INSTITUTE FOR THE CONSERVATION OF
HISTORIC AND ARTISTIC WORKS, VIENNA**

The 2012 Congress will focus on a topic that is uniquely well-suited to Vienna's wealth and breadth of decorative and applied arts heritage. Ornament and decoration have been evident in human endeavour since the beginning of human history, ranging from the bold clarity of ancient Egypt to the great period of Jugendstil and the Vienna Secession around 1900 and on to the exuberant revivals of today.

Please visit the site: <http://www.iiconservation.org>

**THE SEVENTH WORLD ARCHAEOLOGICAL
CONGRESS, 14-18 JANUARY 2013, KING
HUSSEIN BIN TALAL CONVENTION
CENTER, THE DEAD SEA - JORDAN**

It is our great pleasure to announce the Seventh World Archaeological Congress to be held in Jordan 14th-18th January, 2013. As of this announcement, registration is open! Your contribution will be of utmost help towards making this a successful and memorable congress. By going to the WAC-7 website (<http://wac7.worldarchaeologicalcongress.org/>) you can register, and propose a theme, a session within a theme, or simply a paper or poster.

The WAC-7 program will be organized into themes, each containing several sessions that related to the same overall issue. The deadline for proposals of themes is April 30th. For a list of themes from WAC-6, see: <http://www.ucd.ie/wac-6/>. Please propose themes early to allow time for people to develop sessions and papers.

WAC-6 was attended by nearly 1,800 people from 74 countries. We hope you will join us in Jordan for WAC-7, and contribute your ideas and energy to the great diverse body that is WAC. In coming to Jordan for WAC-7, you will also have the opportunity to see Jordan's rich cultural and social life, sample Jordan's outstanding archaeological heritage, and participate in WAC's infamous hospitality!

Please help WAC by passing this announcement to any interested parties. For more information, please visit <http://wac7.worldarchaeologicalcongress.org/> or <http://www.worldarchaeologicalcongress.org/>

I hope to see you all in Jordan next year!

Organizer: Dr Arwa Badran, Assistant Professor in Museum Studies, Hashemite University, Zarqa-Jordan

**34TH ANNUAL CONFERENCE OF THE
THEORETICAL ARCHAEOLOGY GROUP,
SCHOOL OF ARCHAEOLOGY, CLASSICS
AND EGYPTOLOGY, UNIVERSITY OF
LIVERPOOL, 17-19 DECEMBER**

Dear colleagues,

The 34th Annual Conference of the Theoretical Archaeology Group is returning to Liverpool for the first time since 1996. TAG 2012 is hosted by the School of Archaeology, Classics and Egyptology at the University of Liverpool and will take place from Monday, 17 December to Wednesday, 19 December. Our theme for TAG 2012 is “**live archaeology**”, and throughout the conference we shall be having a number of activities celebrating becoming an archaeologist and doing archaeology.

The TAG 2012 Committee now welcomes proposals for sessions, individual papers and posters for the conference. If you are interested in proposing a session, paper or poster, please go to our [Submission of proposals](#) page for information about guidelines and deadline dates.

For further information please visit the TAG Liverpool 2012 website (<http://www.liv.ac.uk/sace/livetag/index.htm>)

For queries please email the conference organisers at sinclair@liverpool.ac.uk

Dr. Eleni Asouti
Director of Research Events & Research Projects Coordinator,
Director of Studies (Geography and Archaeology)

Associate Editor, *Archaeological and Anthropological Sciences*
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CHARCOAL ANALYSIS WEB: <http://pcwww.liv.ac.uk/~easouti/>

**SECOND EUROPEAN NUCLEAR PHYSICS
CONFERENCE (EUNPC 2012),
ACHIEVEMENTS AND FUTURE
PERSPECTIVES, SEPTEMBER 17-21, 2012,
BUCHAREST, ROMANIA FIRST CIRCULAR**

EuNPC2012 is the Second European Nuclear Physics Conference, organized by the Nuclear Physics Board of the European Physical Society. The local organizers of the Conference are the "Horia Hulubei" National Institute for Physics and Nuclear Engineering and the Romanian Physical Society.

Expecting significant developments in Nuclear Physics in the coming years, EuNPC2012 is believed to be a unique opportunity to review the progress made and to look as far as possible into our future. The nuclear physics community, from young physicists to established practitioners, is invited to meet in Bucharest to showcase the Nuclear Physics for the Next Generations.

Venue

The Conference will be held at Rin Grand Hotel (<http://www.rinhotels.ro/Grand-Hotel/Home>), Bucharest, Romania, between 17-21 September 2012.

Scientific Programme

Continuing the tradition of the First European Nuclear Physics Conference (Bochum, 2009), the 2012 edition will be a blend of plenary talks given by outstanding personalities in the field of Nuclear and Hadron Physics and contributions of young researchers and students.

The scientific program will consist of invited talks on recent advances in Nuclear and Hadron Physics as well as oral or poster contributions of outstanding results in the following fields:

- Accelerators and Instrumentation**
- Nuclear Structure and Dynamics**
- Nuclear Astrophysics**
- Astroparticle Physics**
- Heavy Ion collisions and QCD phases**
- Hadron structure and spectroscopy**
- Fundamental symmetries**
- Nuclear Physics Applications**
- Few Body systems**

EuNPC2012 will consist of plenary talks in the morning which are geared towards a broad audience and several parallel sessions in the afternoon, covering the above mentioned domains. Young researchers and students are strongly encouraged to contribute.

Programme Committee

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Olaf Scholten (Chair)
Nicolae-Victor Zamfir

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Nicolae Victor Zamfir

Pre-registration and abstract submission.

The Programme Committee invites the submission of abstracts. The deadline for abstract submission is April 15, 2012. Abstracts must be submitted by uploading on the conference website, in the specified format. (see http://www.ifin.ro/eunpc2012/abstract_submission.php). Abstracts may be submitted for „Overview” talks, presenting the work of a larger group, „Focus” talks, concentrating on a specific development, or „poster” presentations. Final placement of the abstracts will be decided by the Program Committee.

Registration and accomodation.

Please fill in the registration and accommodation forms at: <http://www.ifin.ro/eunpc2012/registration.php> and <http://www.ifin.ro/eunpc2012/accomodation.php>, respectively. The Conference will start on Monday, September 17, in the morning, so most of the participants are expected to arrive in Bucharest on Sunday, September 16.

It is strongly suggested to book the room at the Rin Grand Hotel, where the conference is held. Participants are expected to make the reservation on their own. In order to benefit from the conference discount rates for accomodation, all booking should be made via the conference site.

For reservations prior to June 30, 2012 the following prices apply:

Standard Sgl. room (breakfast and lunch included) 52 Euro

Standard DbL. room (breakfast and lunch included) 2 x 35 Euro

Junior Suite Sgl. (breakfast and lunch included) 74 Euro

Junior Suite Dbl. (breakfast and lunch included) 2 x 46 Euro
For reservations made after June 15, 2012, the prices will be:
Standard Sgl. room (breakfast and lunch included) 62 Euro
Standard Dbl. room (breakfast and lunch included) 2 x 42 Euro
Junior Suite Sgl. (breakfast and lunch included) 84 Euro
Junior Suite Dbl. (breakfast and lunch included) 2 x 52 Euro
Shuttle bus transportation from Otopeni Airport to Rin Grand Hotel: 8 Euro / person
The official travel agency Happy Tour (www.happytour.ro/en) offers also solutions for individual transportation from/to the Bucharest-Otopeni airport and organisation of social events.

Conference fees

EPS Members *) 200 Euro

Non EPS Members 350 Euro

Students 70 Euro

Accompanying persons 35 Euro

Late registration (after June 15, 2012) + 100 Euro

*) How to become a EPS Member, see <http://www.eps.org/?page=members>

The participants are required to pay the conference fee before September 1, 2012, via internet (see details at <http://www.nipne.ro/eunpc2012/registration.php>) or by bank transfer at:

Bank: BANK POST MAGURELE

Address: 1 Atomistilor Street, Magurele/Ilfov, RO-077125, Romania

Account Holder: Horia Hulubei National Institute for Physics and Nuclear Engineering (IFIN-HH)

Account number: RO94BPOS70903296299EUR01

SWIFT: BPOSROBU

Financial support

Subject to funding, the organizers may provide full or partial support for young researchers, selected from applicants accepted for oral or poster presentations.

Medical Insurance

The participants should have a social insurance (private or subscribed by its employer/Institute) that covers them during their stay in Romania since the EuNPC2012 does not cover medical treatment, accident, third-party liability and repatriation.

Important dates

April 15, 2012 Deadline for abstract submission and application for financial support

May 15, 2012 Notification on selected talks and posters

June 15, 2012 Deadline for Registration and Accommodation with reduced fees

July 30, 2012 Second Circular

September 1, 2012 Deadline for fee payment

Visas

The participants that are not EU citizens are strongly encouraged to check on visa requirements (<http://www.mae.ro/en/node/2040>).

Conference Secretariat

All correspondence should be addressed to:

Ms. Corina Dulea

Horia Hulubei National Institute for Physics and Nuclear Engineering (IFIN-HH)
30 Reactorului St., Bucharest-Magurele, jud. Ilfov, P.O.B. MG-6, RO-077125, Romania

Tel.: (+4) 021 404 2301, Fax.: (+4) 021 457 4440

Mobile: (+4) 0749 071 045

E-mail: eunpc2012@nipne.ro

All information will be posted on the Conference web page www.ifin.ro/eunpc2012/

Looking forward to welcoming you in Bucharest!

Organizing Committee

elena.stoica@ancs.ro

HUMAN OSTEOLOGY CRASH COURSE, 10-14 **SEPTEMBER 2012, UNIVERSITY OF** **SHEFFIELD, DEPARTMENT OF** **ARCHAEOLOGY**

Link to downloadable PDF flier too.

A five-day course suitable for those working in outdoor occupations, the rescue services, field archaeology and museums, or for those wanting a taster course in human osteology.

Please note, this course will involve handling human bones.

When: Monday 10th September - Friday 14th September 2012

Where: University of Sheffield, Department of Archaeology

Cost: £400 full price, £340 concession (students and unwaged - please note, there are a very limited number of concessionary places) Introduction

The University of Sheffield's Department of Archaeology has a long history of teaching and research in human osteology. Members of our current research team have a wealth of professional and practical experience, and have worked extensively on projects in the UK and Europe, as well as other areas of the world. Our combined research interests cover a variety of subjects and time periods, from early hominid evolution to post medieval cemetery populations.

This course will be taught in our main osteology laboratory using the Department's human skeletal reference collection. We aim to provide participants with an overview of human skeletal anatomy and a variety of osteological methods, in order to convey understanding and recognition of standard osteological practice and help participants gain confidence when dealing with human skeletal material.

Course Content

Participants will begin to develop skills in:

- Understanding of human musculoskeletal anatomy
- Understanding the principles of excavating human skeletal material
- Recording a skeleton both in the field and the laboratory
- Estimating age, sex, and stature
- Identifying key features of both juvenile and adult dentition
- Understanding the fundamental characteristics of bone microstructure
- Recognising dental and non-dental pathology
- Interpreting osteological findings and relating them to the wider archaeological context

Day 1

- Practical arrangements and health and safety
- Handling remains in the field and laboratory
- Introduction to excavating human remains

The human skeleton from an evolutionary perspective
Basic skeletal anatomy, handling major bones and learning diagnostic osteological features

Full skeletal layout

Day 2

Assigning age at death
Biological sex estimation
Adult stature estimation
Demographic analysis and population profiling

Day 3

Overview of human dentition
Identifying deciduous and permanent teeth
Identifying dental and non-dental skeletal pathology

Day 4

Introduction to bone microstructure and thin section analysis
Bone taphonomy
Osteology in context: bringing the dead to life

Day 5

Review of the week's lectures and activities
Full osteological inventory and assessment

Course venue

The course will be held at Northgate House, the University of Sheffield's Archaeology Department on West Street. Northgate House is a five-minute tram-ride from Sheffield Station and a five minute walk from the city centre.

Tea/coffee will be provided but lunch is not included in the price of the course. There is a wide choice of sandwich bars, pubs and restaurants less than two minutes walk from the department.

Accommodation is not provided in the price of this course. However, the course organisers are happy to offer recommendations to suit any budget.

Registration

Registration for this course is now open. Places cost £400 per person (£340 for a limited number of concessionary places), and can be booked at our online shop by clicking on the link below. Registration will close on Friday 31st August 2012.

Online shop

For further information regarding this course, please email Lauren McIntyre (l.j.mcintyre@sheffield.ac.uk) or Isabelle Heyerdahl-King (prp09ish@sheffield.ac.uk), or phone us on 0114 2222948.

Cancellations and Refunds

Refund requests should be made by email to the course organisers, no less than 7 days before the start of the course. We will endeavour to fill the course place, and in the event that a replacement is found a full refund will be made. If a replacement cannot be found a refund of 50% of the course fee will be made for cancellations made more than 7 days before the start of the course. No refund will be made for cancellations made less than 7 days before the course start date.

If you are experiencing any difficulty please contact us as early as possible.

Please visit the site: <http://www.shef.ac.uk/archaeology/news/events/human-osteology5day>

**CRAFT AND PEOPLE – AGENTS OF
SKILLED LABOUR IN THE
ARCHAEOLOGICAL RECORD -
INTERNATIONAL CONFERENCE, BRITISH
MUSEUM, 1-2 NOVEMBER, 2012, CALL FOR
PAPERS**

We are very pleased to announce that we will be organizing an international conference, to be held at the British Museum on the 1. and 2. November, 2012, on

Craft and People – Agents of Skilled Labour in the Archaeological Record

The call for papers is now open – deadline for the submission of abstracts for papers and posters is the 15. June, 2012.

Further information, as well as conference flyers, abstract forms, and updates, can be found on the conference blog:
craftandpeople.wordpress.com <http://www.craftandpeople.wordpress.com/>.

You can contact us at craftandpeople@gmail.com

Please feel free to circulate this email widely.

We are looking forward to your contributions, and to an inspiring conference!

Sara Strack (University of Leicester)
Marion Uckelmann (University of Exeter)
Ben Roberts (British Museum)

DYES IN HISTORY AND ARCHAEOLOGY
(DHA31), 31ST MEETING, 18-19
OCTOBER 2012, ANTWERP, BELGIUM

The 31st Meeting of Dyes in History and Archaeology (DHA 31) will be organized in Antwerp, Belgium, 18-19 October 2012. Traditionally, this conference focuses on studies of all facets related to natural and organic dyes and pigments such as their history, chemistry and use in objects of art and culture. Multidisciplinary approaches are particularly encouraged.

Contributions for oral or poster presentation will be selected by a scientific committee. After the conference, selected oral presentations may be submitted for peer-review and publication in e-Preservation Science.

Those interested to participate with or without a contribution are invited to read all the conference details at: [URL:http://www.chriscooksey.demon.co.uk/dha/dha31.html](http://www.chriscooksey.demon.co.uk/dha/dha31.html).

SUMMER ARCHAEOBOTANY SCHOOL IN ASTURIAS (SPAIN)

Dear colleagues,

Here I enclose information about the Summer School we are organizing in Asturias this summer. Could you, please pass it to interested people?.

Many thanks

Leonor

Leonor Pe ña-Chocarro
Escuela Espanola de Historia y Arqueologia en Roma (CSIC) Via di
Torre Argentina 18
00186 Roma
e-mail: leonor.chocarro@csic.it

For information on the archaeobotany summer school, click on these PDFs

File Name: <https://webmail.csic.es/bigfiles/descarga.php?l=50828607x&t=1334070054>

File Name: <https://webmail.csic.es/bigfiles/descarga.php?l=50828607x&t=1334070054>

INTERNATIONAL CONFERENCE "1912-2012. A CENTURY OF RESEARCH IN PREHISTORIC MACEDONIA"

For more information and an application form, see: <http://macedonia.prehistoric-conference.com>

2012 is an anniversary year for the city of Thessaloniki and for northern Greece, as a century ago it was incorporated in the Greek state. Through this century archaeological research has undergone various phases, has adapted to the varying historical conditions, by either keeping a critical position or serving them. Through this century much has been accomplished through the work of numerous Greek and foreign archaeologists, the Archaeological Service, the Aristotle University of Thessaloniki and Greek and foreign Archaeological Institutions, but even more remain to be done and could shape the research goals of the upcoming decades. It is therefore a chance for an up-to-date review of what prehistoric research has succeeded, for a critical approach to its theoretical and methodological orientations and for setting off future perspectives.

The Archaeological Museum of Thessaloniki, regarding of most importance the overall and effective presentation of the research results, as well as the initiation of a dialogue that is not confined among scientists but is related to the social implications of archaeology, is organizing the Conference for the Century of Research in Prehistoric Macedonia, in cooperation with the Aristotle University of Thessaloniki.

We invite you to support this attempt and participate in the conference with contributions that essentially comprise a synthesis of research results and add to our knowledge about prehistoric Macedonia. The chronological framework includes all periods from the Paleolithic to the end of the Late Bronze Age and the transition to Iron Age. The thematic sessions regarding the contributions are the following:

- 1. The history of prehistoric research in Macedonia:** historical and critical approaches – theoretical and methodological issues – the excavations and the persons of research
- 2. Chronology:** stratigraphic sequences – excavation assemblages – absolute dating
- 3. The environment of Macedonia and prehistoric people:** paleoenvironment – diet – zooarchaeology – archaeobotany – physical anthropology – archaeometry
- 4. The creation of space:** architecture – settlements and cemeteries – space and its notions
- 5. From objects to ideas:** technologies and artefacts – interpretative approaches – understanding the prehistoric societies of Macedonia through the archaeological research
- 6. From archaeological research to society:** museological and educational issues – public archaeology – prehistoric research and public works
- 7. Archaeology and crisis: after one century, what?** Future perspectives of prehistoric archaeological research in the uncertain and changing environment of our times.

- The conference will be held in the Archaeological Museum of Thessaloniki
- The deadline for submission is the 31st May 2012
- Submissions should be accompanied by a short abstract (no more than 300 words)
- The scientific and organizing committee retains the right not to accept submissions that do not meet the thematic sessions of the conference
- Presentations can be either oral or poster

· Travel and accommodation expenses cannot be covered

Coordination of organisation

Dr. Polyxeni Adam-Veleni, Director of the Archaeological Museum of Thessaloniki

Dr. Evangelia Stefani, Archaeologist, Archaeological Museum of Thessaloniki

Scientific committee

Stelios Andreou, Professor of Prehistoric Archaeology, Aristotle University of Thessaloniki

Nikos Efstratiou, Professor of Prehistoric Archaeology, Aristotle University of Thessaloniki

Kostas Kotsakis, Professor of Prehistoric Archaeology, Aristotle University of Thessaloniki

Aikaterini Papaefthymiou-Papanthimou, Professor of Prehistoric Archaeology, Aristotle University of Thessaloniki

**7TH INTERNATIONAL SYMPOSIUM ¹⁴C &
ARCHAEOLOGY, 8-12 APRIL 2013, GHENT,
BELGIUM**

<http://www.radiocarbon2013.ugent.be/> is now online and open for abstract submission.

IAMS SUMMER SCHOOL 2012 AND NEW WEBSITE

Dear Colleagues,

Following in our traditional footsteps, the Institute for Archaeo-Metallurgical Studies (IAMS) and NARNIA are pleased to announce that this year's Summer School will be taking place at UCL's Institute of Archaeology over two weeks from the 25th of June to 6th of July 2012.

Please find details of the planned program in the attached pdf or on our website at http://www.ucl.ac.uk/iams/2012_sumHello Loicmer_school.

IAMS is also proud to announce the launching of its new official website (<http://www.ucl.ac.uk/iams>). We hope that it will become a regular stop for professionals and academics interested in the field of metallurgy.

In an effort to make this new website useful to the community as a whole, we will be keeping our front page up to date with archaeometallurgy news and events. As such, please feel free to send us any relevant items you wish to advertise on our website. We would also like to point visitors to the now freely downloadable IAMS journal.

Best wishes,

Loic Boscher

BRONZE AND IRON AGE
ARCHAEOMUSICOLOGY IN ANCIENT
TURKEY, 16 - 20 OCTOBER 2012, BURSA,
TURKEY, CALL FOR PAPERS,
REGISTRATION

Jointly organised by

The Research Center of Archaeology of the University of Uludağ, Bursa, Turkey, and
ICONEA www.iconea.org

The conference will explore all aspects of music practice and theory in Ancient Turkey, through iconographic and textual materials, and other relevant media.

Languages and translation

The official language will be English. Papers in Turkish will be presented with an abstract in the English language. Only papers in those languages for presentation and publication of proceedings will be accepted.

Venues

The opening and conference sessions will be held in conference halls at the University Campus.

Presentations

Presentations will be limited to 30/45 minutes with an additional 20 minutes for questions. Please send your abstract as soon as possible to rdumbrill@iconea.org

Conference excursions

There will be a short visit of the city of Bursa and its Archaeological Museum; Hagia Sophia in Iznik, and Büyük Orhan Basilica. (Excursion programme may change.)

Registration and fees

To register, please request a form from: rdumbrill@iconea.org

Please note that the deadline is set to the 15th of May

You are advised to book your hotel accommodation as soon as possible.

Click on the following link:

<http://www.holidayinnbursa.com/EN/2/0/hotel.html>

How to get there:

From Atatürk Airport to Bursa

Taxi or Shuttle to Yenikapı. Take the ferry to Mudanya (BURSA). It takes one and half hours from Yenikapı to Mudanya. From Mudanya take a bus to BURSA and Uludağ University (Bus 2/U).

It is advised to make a reservation for the Ferry to Bursa.

<http://www.ido.com.tr/en/index.cfm?>

page=SubPage&kapsam=175&textid=3091&ln=EN

Shuttle to Yenikapı:

<http://www.ido.com.tr/en/index.cfm?page=SubPage&textid=2874&ln=en>

From Sabiha Gökçen Airport to Bursa

Takes a minibus to Bursa. They are to be found at the airport exit.

Take the AKMIŞ service <http://www.akmisyahat.com/default.asp?slyfox=bursadonus>

<http://www.plazatur.com/tr-TR/?uID=8343ec94e2a14ec48025bcbf3cbbad0d467>

From the Bursa Bus Terminal, take another bus to the University of Uludağ University (93).

FIRST INTERNATIONAL CHARIOT CONFERENCE, 1-2 DECEMBER 2012, CAIRO EGYPT

The fourth notification of the First International Chariot Conference (including details on the proceedings) can be found at <www.leatherandshoes.nl>.

The schedule for the Conference and abstracts are free to download as .pdf at <www.palarch.nl>.

Registration

There will be an opportunity to register on two occasions: Friday 30 November from 16.00 to 18.30 and Saturday 1 December from 08.30 to 09.00 at the registration desk in the NVIC.

Costs are: foreigners \$ 20 (LE 120); foreign students \$ 10 (LE 60); Egyptians \$ 5 (LE 30); Egyptian students \$ 2 (LE 10).

Publication:

The proceedings will be jointly published by the PalArch Foundation and Sidestone Press (www.sidestone.com), and offered for free downloading at www.PalArch.nl. It will be readable online for free in the e-library of Sidestone Press (<http://www.sidestone.com/library/>).

Printed versions (Printing on Demand) can be obtained through Sidestone Press as well.

Looking forward to see you in Cairo!

André J. Veldmeijer & Salima Ikram

Salima Ikram
Chair, SAPE Department
Professor of Egyptology
American University in Cairo
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ΘΕΣΕΙΣ ΕΡΓΑΣΙΑΣ/ΥΠΟΤΡΟΦΙΕΣ –
JOB VACANCIES/FELLOWSHIPS

TWO NEW POSTS AT BOURNEMOUTH

Dear colleagues,

We have two new posts at Bournemouth: Lecturer/Senior Lecturer Palaeoanthropology, and Lecturer/Senior Lecturer Archaeological Science. Please find details below.

http://www.bournemouth.ac.uk/jobs/academic_jobs.html

I would be very grateful if you would circulate these widely.

Best wishes,

Kate

Dr Kate Welham
Head of Academic Group - Archaeology
Associate Professor of Archaeological Science
School of Applied Sciences
Bournemouth University
Talbot Campus
Poole
BH12 5BB

Tel: 01202 965955
Fax: 01202 965255
kwelham@bournemouth.ac.uk

CALL FOR A POST-DOC IN BAYESIAN STATISTICS APPLIED TO CHRONOLOGY

Dear colleagues,

Please find via the links below a call (in English and French) for a post-doc in Bayesian statistics applied to chronological modelling.

French: <http://www.chronomodel.fr/index.php/fr/documents/finish/4/17>

English: <http://www.chronomodel.fr/index.php/fr/documents/finish/4/19>

Details are in the call and also on web site:

<http://www.chronomodel.fr/index.php/fr/>

(sorry, the English version of the website is still under construction)

Best wishes,
bien cordialement,
Philippe

Philippe LANOS - Directeur de Recherche Institut de Recherche sur les
Archéomatériaux (IRAMAT) - CNRS UMR 5060 Centre de Recherche en Physique
Appliquée à l'Archéologie (CRPAA) Université Bordeaux 3 Lieu de travail:

Université de Rennes 1 "Géosciences-Rennes"

Bât. 15, Equipe "Paléo-Archéomagnétisme"

Campus scientifique de Beaulieu, CS 74205

35042 RENNES Cedex

Tel. : +33 (0)2 23 23 56 39 Fax.: +33 (0)2 23 23 60 97

mobile: 06 89 59 39 49

philippe.lanos@univ-rennes1.fr

NARNIA TRAINING COURSES IN THE COMING MONTHS!

I would like to draw your attention to a number of NARNIA training courses taking place in the following months across the NARNIA partnership:

- **Combined workshop: (1) Optical study of ancient glass with a focus on UV-VIS-NIR and Raman Spectroscopy and (2) Chemical study of ancient glass with a focus on SEM-EDX**
16-20 April 2012, Belgium
For more information, please visit: <http://narnia-itn.eu/trainingcourses/combined-workshop-1-optical-study-of-ancient-glass-with-a-focus-on-uv-vis-nir-and-raman-spectroscopy-and-2-chemical-study-of-ancient-glass-with-a-focus-on-sem-edx-b/>
- **Introduction to the Archaeometallurgy of Cyprus**
07-11 May 2012, Cyprus
For more information, please visit: <http://narnia-itn.eu/trainingcourses/introduction-to-the-archaeometallurgy-of-cyprus/>
- **The Archaeology of Glassmaking**
23-25 May 2012, United Kingdom
For more information, please visit: <http://narnia-itn.eu/trainingcourses/one-week-training-course-on-primary-glass-production-in-archaeology-lba-to-islamic/>
- **Ancient mining**
25-29 June 2012, United Kingdom
For more information, please visit: <http://narnia-itn.eu/trainingcourses/ancient-mining/>
- **Ancient metallurgy**
2-6 July 2012, United Kingdom
For more information, please visit: <http://narnia-itn.eu/trainingcourses/ancient-metallurgy/>

The full list of training courses offered by the NARNIA partnership can be found at the project's website (www.narnia-itn.eu) under the Training Courses heading .

ΑΝΑΚΟΙΝΩΣΕΙΣ - ANNOUNCEMENTS

AMS RADIOCARBON DATING RESEARCH

CONTRACT

Dear colleagues,

Please find below an invitation to collaborate with English Heritage on a four-year AMS radiocarbon dating research programme.

best wishes

Peter Marshall
English Heritage Scientific Dating Team

Invitation to collaborate

English Heritage would like to invite collaboration on the AMS radiocarbon dating component of our research programme for 2012-16.

Much of our research is funded through the National Heritage Protection Commission's Programme although other research is also undertaken both by English Heritage staff and in support of the statutory responsibilities of the organisation. During the period of this contract, in collaboration with Cardiff University, we will also undertake a major research project funded by the European Research Council called "*The Times of Their Lives: Towards Precise narratives of change in the European Neolithic through formal chronological modeling*".

The contract will be split into 3 lots to allow inter laboratory comparison. Only one contractor will be awarded a lot. Each Lot will be made up of approximately 700 to 900 AMS measurements but this figure may vary.

The radiocarbon samples

Details of the 2012-16 research programme are still being finalised, but it is likely that between 2000 – 2500 AMS measurements will be needed over the next four years (1 August 2012 – 31 July 2016). The vast majority of results will be integrated into Bayesian chronological models.

Collaborating laboratories will need to process a full range of samples, including:

- bone collagen (including C:N ratios, $\delta^{13}\text{C}$, and $\delta^{15}\text{N}$ for dietary studies)
- waterlogged plant macrofossils
- charred organic residues on potsherds
- charcoal and other charred plant material
- cremated bone
- bulk sediments (various fractions)

It is possible, although less likely, that samples of chitin and shell may be submitted for dating. It is also possible that some samples that have undergone conservation will be

submitted for dating (eg treated with PVA or PEG), and methods statements should include suggested protocols for dealing with such samples.

$\delta^{13}\text{C}$ measurements are required for all radiocarbon measurements. Quoted errors must be estimates of total error. It is anticipated that almost all samples will date to after 10,000 BP, the majority being of less than one half-life.

Collaboration

All samples will be selected, documented (using EH dating forms), and identified by members of the project teams and the EH Scientific Dating Team. From receipt by the collaborating laboratory, results are requested within 12–16 weeks (requested turnaround will be specified on submission).

Research input from collaborating facilities is critical for the production of the best chronologies possible for our sites (see Section 1.3, Tender Evaluation Criteria). Input will be needed from collaborating laboratories over such issues as appropriate replication, selection of organic fractions, particularly low-collagen sites, etc. All collaborators will need to provide full, written, methods statements (referenced as appropriate) which will be amended for use in publication texts. Some input will be needed in publishing problematic or unexpected results, and in meeting particularly challenging dating problems. A representative of each collaborating laboratory will be a named author on publications arising from the research programme and on appropriate volumes in the English Heritage *Radiocarbon Dates* series. Collaborators will need to read and comment on draft publication texts as appropriate.

A number of high precision conventional radiocarbon measurements will be obtained in support of this research programme, and at least two laboratories will provide measurements for each project (allow cross-comparison). Collaborators will therefore need to work with the staff of other facilities.

Award of contract(s)

All bids which pass all essential criteria will be assessed on a combination of their overall quality, research input, reliability of service, and price. The top 3 scoring tenderers will be awarded a Lot each. Applications for the entire research programme will not be considered.

Expressions of Interest

This contract has been advertised in the OJEU (<http://ted.europa.eu/udl?uri=TED:NOTICE:134789-2012:TEXT:EN:HTML>).

Laboratories interested in this research opportunity should register their initial interest by emailing [peter.marshall@english-heritage.org.uk] so that English Heritage can issue you with an Invitation to Tender document. This needs to be completed and returned no later than 11am GMT on 18 June 2012.

INTERNET SITES

E-CORPUS

www.e-corpus.org is a collective digital library coordinated by the Centre de Conservation du Livre (Arles, www.ccl-fr.org) and co-financed by the Provence-Alpes-Côte d'Azur Region and the European Union.

What's new on E-Corpus

Within a couple of month, upgrades will be made on e-corpus :

New Welcome page

New possibilities to design the Welcome pages for the connected websites

Permanent Link with new rules

Easier way to collect databases with the UNIMARC process.

On the other hand, E-corpus participates to different Research programs and will be able to develop a new study to optimize the Format text encoding Initiative (TEI).

OAI.pmh Fonctions

ISIDORE (CNRS-Adonis-Sciences humaines) already harvest Metadata from E-Corpus

New projects of "harvest" have been launched and the next E-Corpus Newsletter will focus on it.

Some News from the connected websites (dedicated websites about an Institution or a project)

UTUniverse : website based on an European project about history of Astronomy

Studite : website based on an European project about byzantine bindings

Website of the Ouest-provence- Etang de Berre Library

News on E-Corpus about Books and Manuscripts from Mediterranean area and Middle-east

The whole collection of the Manuscripts of the Aga khan Museum is now available on E-Corpus

In June 2012, e-Corpus and the Manumed project (European Union - Euromed Heritage IV) will open, in Jerusalem, the joint website of the Palestinian Libraries.

The photographic Library of the French Institut of the Near East is now available on E-Corpus and on the dedicated website of the IFPO;
20751 images are on line.

Archives of the serial SH Levant (french army in Syria and Middle East at beginning of XXth century) from Frech Army Archives are in progress of digitalization . 20 000 pages are already available.

Within the context of the European project Manumed, the CCL is operating a new video game, a kind of serious game who will make a large public aware of the wonderful written cultural heritage of the European and Mediterranean area.

Please visit the site:

http://newsletter.neteor.com/online/view_bd1f705e99c276a852ed7daa23c54aa9_1058.htm [Go there for embedded links and for French version]

ΝΕΟΛΙΘΙΚΟΣ ΟΙΚΙΣΜΟΣ ΑΥΓΗΣ **ΚΑΣΤΟΡΙΑΣ: ΑΝΑΡΤΗΣΗ ΠΡΟΦΟΡΙΚΗΣ** **ΑΝΑΚΟΙΝΩΣΗΣ ΚΑΙ ΠΑΡΟΥΣΙΑΣΗΣ**

Αγαπητοί συνάδελφοι και φίλοι,

Στο σύνδεσμο http://www.neolithicavggi.gr/?p=1304&langswitch_lang=en μπορείτε να διαβάσετε την ανακοίνωση «*Σπίτια & Αυλές* στο Νεολιθικό Οικισμό Αυγής: το Κτίριο 5 και οι γειτονικοί ανοιχτοί χώροι» και ακόμη να δείτε το συνοδευτικό οπτικό υλικό της (ppt .). Η ανακοίνωση αυτή παρουσιάστηκε στην 25η Συνάντηση για το *Αρχαιολογικό Έργο στη Μακεδονία και τη Θράκη*, Θεσσαλονίκη, 1-3 Μαρτίου 2012.

Με εγκάρδιους χαιρετισμούς,

Γεωργία Στρατούλη

PAVLOPETRI – THE CITY BENEATH THE WAVES

On Sunday 9 October, underwater archaeologist Dr Jon Henderson leads a team from the Hellenic Ministry of Culture in a one-hour BBC Two programme exploring the oldest submerged city in the world.

The underwater city of Pavlopetri, a city that thrived for 2,000 years during the time that saw the birth of Western civilisation, lies less than five metres below the surface and is littered with thousands of fragments, the remains of stone buildings and a complex of city streets.

The team uses state of the art technology to investigate the site and digitally raise it from the seabed, while the many artefacts recovered help shed light onto a previously hidden world.

The City Beneath the Waves: Pavlopetri will be shown on Sunday 9 October on BBC Two at 8pm. To find out more about the programme, visit the BBC website.

You can hear BBC History Magazine's Dave Musgrove talking to Jon Henderson about the programme and Pavlopetri on this week's podcast.

Please visit the site: <http://www.historyextra.com/pavlopetri> [Pavlopetri is off the coast of southern Laconia, in the Peloponnese]

SALT DAMAGE ON THE WALL RELIEFS OF DENDERA TEMPLE, EGYPT, BY HESHAM ABBAS KAMALLY

The present study aims to identify and to characterize the main deterioration mechanisms that affect the wall reliefs of Dendera temple, Upper Egypt. The temple is famous for its beautiful wall reliefs, painted with religious scenes and inscriptions. Nowadays the reliefs show considerable damage, particularly due to salt weathering processes. In particular, the wall reliefs show salt crystallization at varying levels, in and between grains, and within the cement materials. The change in temperature and relative humidity in the studied area play an important role in the salts crystallization and hydration causing several deterioration features such as cracks, powdering, paint and plaster detachment, flaking, discoloration and iron oxides stains. Several samples were examined by polarizing microscopy (PLM), X-ray diffraction analysis (XRD) and scanning electron microscopy equipped with an energy dispersive X-ray analysis system (SEM-EDX). The results reveal that the damage in wall paintings are mainly attributed to the effect of different salts such as gypsum ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$), anhydrite (CaSO_4), halite (NaCl), mirabilite ($\text{Na}_2\text{SO}_4 \cdot 10\text{H}_2\text{O}$) and sylvite (KCl). These results allowed the identification of the types of salts and deterioration features, information that may be used in the future for conservation purposes.

Please visit the site: <http://www.e-conservationline.com/content/view/1056> [Go there for the complete downloadable Note, with pix]

THE ARCHAEOLOGICAL WORK OF THE EPHORIAS ON THE INTERNET

Please visit the site: <http://www.yppo.gr/0/anaskafes/index.html>

BRITISH MUSEUM ONLINE RESEARCH CATALOGUES: THE RAMESSEUM PAPYRI, BY R. B. PARKINSON

'Among the few important finds of papyri which Egyptology has to record none has been subject to greater vicissitudes ... than the assemblage known under the name of the Ramesseum papyri.' (Gardiner 1955a: 1)

This online research catalogue brings together for the first time all of the surviving Middle Kingdom papyri from a 13th Dynasty shaft-tomb at Luxor that was later covered by the funerary temple of Ramses II, known as the Ramesseum. This unique library is now held in the British Museum (136 frames of papyri) and the Ägyptisches Museum und Papyrussammlung, Berlin (38 frames). Associated objects from the tomb are held in the University Museum, Manchester, the Fitzwilliam Museum, Cambridge, and the University of Pennsylvania Museum of Archaeology and Anthropology.

The catalogue presents a comprehensive photographic record of these fragile papyri and a discussion of their archaeological context.

Object entries are generated directly from our collection database; they will change as scholars continue to research these texts, making it a 'living' catalogue with contents.

Preface

The archaeological context

The modern history

The catalogue

All objects

Bibliography

Richard Parkinson wrote about this project in the British Museum blog, April 4, 2012 • 8:42 am, Opening up an ancient Egyptian library.

Please visit the site: <http://ancientworldonline.blogspot.com/2012/04/british-museum-online-research.html>

ΝΕΕΣ ΕΚΔΟΣΕΙΣ – NEW PUBLICATIONS
APRIL, 2012, ISSUE – VOLUME XXV, NO. 1 –
OF THE CSA NEWSLETTER

Announcing that the April, 2012, issue – Volume XXV, No. 1 – of the _CSA Newsletter_ is now available at <http://csanet.org/newsletter/#spring12>

"Changing Web Standards and Long-Term Web Access"

Can we really use the web for important text? -- Harrison Eiteljorg, II
<http://csanet.org/newsletter/spring12/nls1201.html>

"Website Review: Glassway, Glass from the antiquities to the contemporary age"

An older website that can serve as an exemplar. -- Andrea Vianello
<http://csanet.org/newsletter/spring12/nls1202.html>

"Website Review: The Acropolis Virtual Tour"

Spectacular imagery in search of a rationale. -- Harrison Eiteljorg, II
<http://csanet.org/newsletter/spring12/nls1203.html>

"Project Publication on the Web -- Addendum II The importance of multiple languages for websites. -- Andrea Vianello <http://csanet.org/newsletter/spring12/nls1204.html>

"Digital Data in Archaeology"

Where do digital data fit? -- Harrison Eiteljorg, II
<http://csanet.org/newsletter/spring12/nls1205.html>

Comments on any Newsletter article are welcome. They are particularly requested concerning the first and last articles. Please write to the editor at csanet.org.

FAYA CAUSEY, AMBER AND THE ANCIENT WORLD. LOS ANGELES: J. PAUL GETTY MUSEUM, 2011

Bryn Mawr Classical Review 2012.04.57

Faya Causey, Amber and the Ancient World. Los Angeles: J. Paul Getty Museum, 2011. Pp. 152. ISBN 9781606060827. \$25.00.

Reviewed by Giuseppe Squillace, Università degli Studi della Calabria, Rende, Italia
(giuseppesquillace@libero.it; giuseppe.squillace@unical.it)

Il volume di Faya Causey fa parte di una ricerca più ampia sull'ambra confluita in una mostra. Il testo, breve ma chiaro, è diviso in paragrafi accompagnati, come nel taglio per lo più archeologico della ricerca, da una serie di immagini di ottima qualità.

La ricerca analizza il tema da differenti punti di osservazione: linguistico, geografico, botanico, medico, storico, artistico, economico e commerciale e si basa per lo più su studi recenti riportati nella bibliografia finale (pp. 142- 145). Le note, poste per scelta editoriale alla conclusione del volume (pp. 131-141), amplificano l'immediatezza del testo accompagnato e chiarito dall'apparato iconografico e completato da una serie di indici (pp. 146-152).

Per la sua multiforme natura legata alla capacità di trasformarsi da resina vegetale in pietra, per il suo colore luminoso e caldo, per la sua rarità che ne accrebbe il valore di mercato, l'ambra fu considerata al contempo pietra preziosa e magica e si inserì nei diversi ambiti della vita quotidiana dei popoli del Mediterraneo antico. "What amber was believed to be, how it was used, and why": questi i quesiti di partenza (p. 13). Nella risposta al primo l'Autrice fa rientrare la simbologia dell'ambra usata come pietra per la confezione di gioielli, come simbolo di unione tra due persone, con funzione di talismano utile contro le malattie, in immagini riferite allo zodiaco, come emblema di potere, dono dopo il parto, elemento connesso ai riti funerari.

Riportando le parole di Jean H. Langenheim, l'Autrice (p. 28) lega l'origine dell'ambra ad "an araucarian Agathis-like or a pinaceous Pseudolarix-like resin producing tree...Although the evidence appears to lean more toward a pinaceous source, an extinct ancestral tree is probably the only solution." La resina, emessa dalla corteccia di questa pianta, dispersa poi nell'ambiente e trasportata dai fiumi, si sarebbe col tempo trasformata in pietra e dunque in ambra confluendo in depositi ubicati per lo più nei paesi del Nord Europa, sebbene tracce ne siano state trovate anche in Liguria, Sicilia, Etiopia, India e Numidia.

Indicata dai Greci come elektron e nota fin dal VI secolo a.C. al filosofo Talete per il suo magnetismo, l'ambra diede origine al termine moderno electricity coniato intorno al 1600 dal medico di Elisabetta I di Inghilterra W. Gilbert al fine di descrivere i caratteri del magnetismo. Essa, osserva l'Autrice (pp. 55-56 e note 85- 86), per la sua natura a tratti misteriosa, fu legata al mito di Fetonte, figlio del dio Sole (detto anche Elektor o Splendente) che, avendo ottenuto dal padre di guidare per un giorno il carro col disco

infuocato, fu incenerito da Zeus preoccupato che potesse avvicinarsi troppo alla terra. Disperate, le sue sorelle si mutarono in pioppi e cominciarono a emettere dai loro tronchi la resina dell'ambra.² Come quello di Mirra, madre di Adone, mutatasi nell'omonimo albero, anche questo mito è caratterizzato da una vicenda di giovinezza, morte e metamorfosi, cui si unisce anche una componente astrologica: Fetonte infatti fu associato alla costellazione dell'Auriga (p. 59).

Se l'Autrice mostra di muoversi agevolmente tra le fonti archeologiche, talora appare poco precisa di fronte alle fonti letterarie greche e latine soprattutto nella sezione a esse dedicata (pp. 66-70). Ad esempio, a p. 67, cita tre passi di Plinio il Vecchio in relazione all'uso dell'ambra (note 111-113), ma a p. 68, pur riportando alla lettera il testo di Plinio, non indica nelle note 115 e 116 il luogo ma preferisce rimandare alla bibliografia moderna. Fa lo stesso a p. 74 per Teofrasto 3.

Nonostante questo limite imputabile al taglio della ricerca, il volume di Faya Causey non manca di pregi ravvisabili in primis nella bellezza delle foto e nell'utile commento che le accompagna e le contestualizza. In particolare sono degne di attenzione alcune parti del volume, come quella, ampia, dedicata agli amuleti usati a scopo terapeutico o apotropaico (pp. 70-88), e la sezione finale dal titolo "Archaeological evidence for the use of figured amber: three periods of abundance" (pp. 89-111). In essa l'Autrice con grande competenza ricostruisce la diffusione dell'ambra presso Greci, Romani ed Etruschi, elenca diversi tipi di manufatto e indica le officine e gli artigiani deputati a lavorare la preziosa resina, la cui sua natura multiforme legata a magia, medicina, profumeria e gioielleria se fu in grado di conquistare i popoli antichi, non manca certo di affascinare anche la società moderna.

Notes:

1. J.H. Langenheim, *Chemistry, Evolution, Ecology, and Ethnobotany*, Portland, Oregon, 2003, p. 169.
2. Ovidio, *Metamorfosi* I 750-II 380; ma anche Diodoro Siculo V 23-24.
3. L'Autrice in questo caso ricorda un aneddoto riportato da Teofrasto relativo a un amuleto che una donna avrebbe donato a Pericle malato, ma nella nota 143 non cita il luogo della fonte ma rimanda ancora alla moderna bibliografia.

Please visit the site: <http://bmcr.brynmawr.edu/2012/2012-04-57.html>

ARCHAEOLOGIA BULGARICA, VOL. XV

All issues of vol. XV of Archaeologia Bulgarica have been published.

Regards,

Lyudmil Vagalinski

editor

www.archaeologia-bulgarica.com

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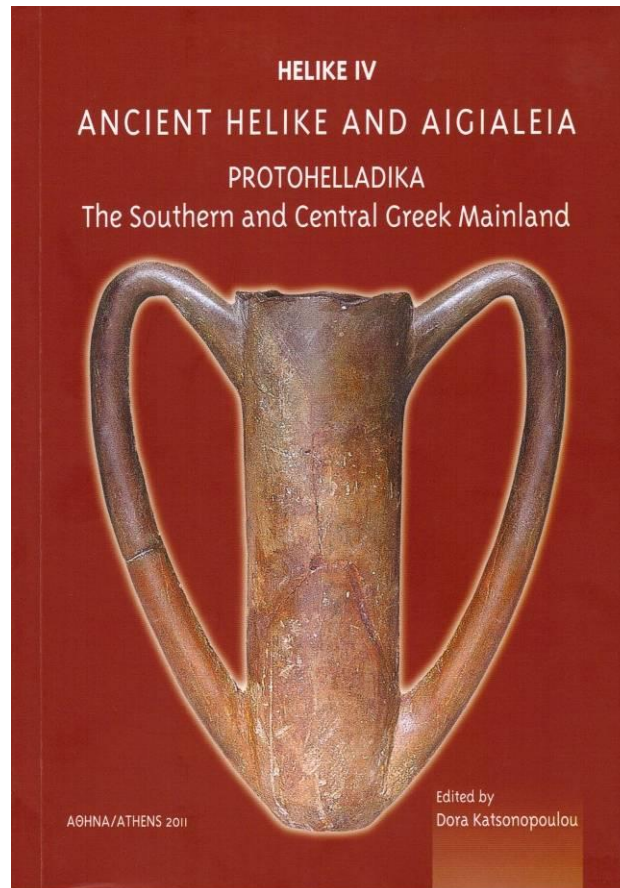
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ΝΕΑ ΕΚΔΟΣΗ ΓΙΑ ΤΗΝ ΠΡΩΤΟΕΛΛΑΔΙΚΗ
ΝΟΤΙΑ ΚΑΙ ΚΕΝΤΡΙΚΗ ΕΛΛΑΔΑ ΣΤΗ ΣΕΙΡΑ
ΠΡΑΚΤΙΚΩΝ ΔΙΕΘΝΩΝ ΣΥΝΕΔΡΙΩΝ
ANCIENT HELIKE AND AIGIALEIA



Κυκλοφόρησε ο τόμος *Helike IV* που εκδόθηκε από την Εταιρεία Φίλων της Αρχαίας Ελίκης (ΕΦΑΕΛ), με την επιστημονική επιμέλεια της Προέδρου της Εταιρείας Καθ. Αρχαιολογίας Ντόρας Κατσωνοπούλου. Ο τόμος είναι ο τέταρτος στη σειρά Πρακτικών Διεθνών Συνεδρίων αφιερωμένων στην Αρχαία Ελίκη και Αιγιάλεια, που οργανώνονται από την ΕΦΑΕΛ σε τακτά χρονικά διαστήματα και πραγματοποιούνται στην περιοχή της Αιγιάλειας. Ο νέος τόμος με τον ειδικότερο τίτλο *Πρωτοελλαδικά- Η νότια και κεντρική Ελλάδα*, περιλαμβάνει τις επιστημονικές ανακοινώσεις που παρουσιάστηκαν στη διάρκεια του Δ' Διεθνούς Επιστημονικού Συνεδρίου *Αρχαία Ελίκη και Αιγιάλεια* που πραγματοποιήθηκε στο ξενοδοχείο «Ποσειδών» στα Νικολαίικα Διακοπτού Ν. Αχαΐας από 1-3 Σεπτεμβρίου 2007. Ιδιαίτερος στόχος του Συνεδρίου υπήρξε η παρουσίαση (α) των αποτελεσμάτων των ανασκαφών του Ερευνητικού Προγράμματος Αρχαίας Ελίκης στον σημαντικό πρωτοελλαδικό (ΠΕ) οικισμό που ανακαλύφθηκε πρόσφατα στην περιοχή της Αρχαίας Ελίκης και (β) των αποτελεσμάτων ερευνών και ανασκαφών σε άλλους σύγχρονους με την Ελίκη ΠΕ οικισμούς της νότιας και κεντρικής Ελλάδας. Το Συνέδριο για τα πρωτοελλαδικά ευρήματα στην περιοχή της Αρχαίας Ελίκης,

ακολούθησε το Γ' Διεθνές Συνέδριο της σειράς *Αρχαία Ελίκη και Αιγιάλεια* που πραγματοποιήθηκε στα Νικολαΐκα Διακοπτού το 2000 και ήταν αφιερωμένο στις γεωαρχαιολογικές έρευνες στην Ελίκη και σε άλλες ιδιαίτερα ενεργές γεωλογικά περιοχές της Ελλάδας και του ανατολικού Αιγαίου. Τα Πρακτικά του Συνεδρίου (*Helike III*) με τον ειδικότερο τίτλο *Αρχαιολογικοί χώροι σε γεωλογικά ενεργές περιοχές* και την εκδοτική επιμέλεια των Ντόρας Κατσωνοπούλου, Steven Soter και Ιωάννη Κουκουβέλα, δημοσιεύθηκαν από την ΕΦΑΕΑ το 2005.

Ο νέος τόμος *Helike IV*, περιλαμβάνει 18 επιστημονικές εργασίες διακεκριμένων ειδικών ελλήνων και ξένων σχετικά με αποτελέσματα ερευνών και μελετών στην Αρχαία Ελίκη και σε αντίστοιχες ΠΕ θέσεις της νότιας και κεντρικής Ελλάδας. Στην πρώτη εργασία του τόμου ερευνάται ένα ιδιαίτερος σημαντικό ζήτημα της ελληνικής προϊστορικής αρχαιολογίας, ο χρόνος των απαρχών της πρώιμης εποχής του Χαλκού στην Ελλάδα και η σύνδεσή του με μεταναστεύσεις πληθυσμών που μιλούσαν μια Ινδο-ευρωπαϊκή γλώσσα, προγονική της ελληνικής (**J. Coleman**). Ο ρόλος της εγχώριας τοπογραφίας στη δημιουργία και στον καθορισμό του οικιστικού χώρου στις ΠΕ θέσεις εξετάζεται στη συνέχεια με παραδείγματα από σημαντικούς οικισμούς της Πελοποννήσου και της κεντρικής Ελλάδας (**E. Weiberg**). Η επόμενη ενότητα αφορά αποκλειστικά στην ανακάλυψη του πρωτο-αστικού ΠΕ οικισμού στην περιοχή της Αρχαίας Ελίκης (στο σύγχρονο Ριζόμυλο) και στα ειδικότερα ευρήματα που ανακαλύφθηκαν κατά τις ανασκαφές των ετών 2000-2007. Αρχικά παρουσιάζονται κατά συνθετικό τρόπο όλα τα ευρήματα του οικισμού: αρχιτεκτονικά κατάλοιπα, κεραμική, πήλινα, οστέινα, και λίθινα αντικείμενα, καθώς και μοναδικά ευρήματα κεραμικής και σπάνια αντικείμενα σε πολύτιμα μέταλλα, και καταδεικνύονται τα ιδιαίτερα χαρακτηριστικά αστικοποίησης υψηλού επιπέδου του οικισμού που φαίνεται ότι αποτέλεσε τον κεντρικό παράλιο οικισμό της ευρύτερης περιοχής κατά την 3^η χιλιετία π. Χ. (**D. Katsonopoulou**). Ακολούθως παρουσιάζεται η πλούσια σε αριθμό και σχήματα κεραμική, αναλύεται η μορφολογία της, συζητείται η χρήση και κατανομή των αγγείων στα κτήρια και στους επιμέρους χώρους του οικισμού και ερευνάται το νόημα που εκφράζουν οι θέσεις και οι χρήσεις τους σε σχέση με τους κατοίκους του χώρου (**St. Katsarou-Tzeveleki**). Η αποτίμηση της πλούσιας ΠΕ κεραμικής από την Ελίκη συμπληρώνεται με την παρουσίαση των αποτελεσμάτων της πετρογραφικής ανάλυσης πηλών από επιτραπέζια αγγεία και αποθηκευτικούς πίθους (**I. Pliopoulos et al.**). Η κατασκευή λιθίνων εργαλείων για την ικανοποίηση κυρίως γεωργικών αναγκών της προϊστορικής αυτής κοινωνίας, που βασιζόταν πρωτίστως σε τοπική πρώτη ύλη, παρουσιάζεται μέσα από την ανάλυση λιθίνων τέχνηρων του οικισμού (**N. Thompson**) ενώ οι πρώτες μελέτες αντιπροσωπευτικών ομάδων μαλακολογικού (**L. Karali**) και ζωοαρχαιολογικού υλικού (**M. Fillios**) φέρνουν στο φως σημαντικές πληροφορίες για τις διατροφικές συνήθειες και ιδιαίτερες ασχολίες των κατοίκων του οικισμού. Τέλος, οι περιβαλλοντικές αλλαγές στην περιοχή του ΠΕ οικισμού αναλύονται μέσα από τα αποτελέσματα των γεωαρχαιολογικών μελετών εξέλιξης του δέλτα της Ελίκης (**A. Koutsios and N. Kontopoulos**).

Ακολουθεί η ενότητα που αφορά σε άλλες, σύγχρονες με την Ελίκη, γνωστές σημαντικές ΠΕ θέσεις της νότιας και κεντρικής Ελλάδας. Κατ' αρχήν, εξετάζεται η ΠΕ I περίοδος σε σχέση με την κατανομή ΠΕ οικισμών στο ανατολικό τμήμα του Κορινθιακού κόλπου και ερευνάται η ΠΕ I παρουσία στην ακρόπολη της Αιγείρας που δεν παρουσιάζει συνέχεια στην επόμενη ΠΕ II περίοδο (**E. Alram-Stern**), σε αντίθεση με τη νέα ΠΕ εγκατάσταση που ανακαλύφθηκε πρόσφατα στο γειτονικό Δερβένι Κορινθίας και παρουσιάζει ανάπτυξη στην ΠΕ II χωρίς ωστόσο να συνεχίζεται η λειτουργία της στην

επόμενη ΠΕ III περίοδο (**Δ. Σαρρή**). Τα εντυπωσιακά σφραγίσματα από την Οικία των Κεράμων στη Λέρνα της Αργολίδας επανεξετάζονται ως προς τη χρήση τους υπό το φως νεότερων ιδεών (**M. Wiencke**) ενώ παλαιοκλιματικές αλλαγές και αλλαγές στο επίπεδο της θάλασσας ερευνώνται και προτείνονται ως παράγοντες της πολιτισμικής κατάρρευσης στην Αργολική πεδιάδα κατά τη μετάβαση από την ΠΕ II περίοδο στην ΠΕ III σε αντίθεση με την επικρατούσα άποψη των καταστροφών από ανθρωπογενείς αιτίες (**C. Shriver et al.**). Στη συνέχεια, η ύστερη ΠΕ II κεραμική από την Κολώννα στην Αίγινα του Σαρωνικού κόλπου αναλύεται με λεπτομέρεια, με ιδιαίτερη έμφαση στις καινοτομίες που παρατηρούνται κατά την κεραμική φάση Γ της ΠΕ II περιόδου (**L. Berger**). Παρουσιάζονται επίσης οι θέσεις ΠΕ εγκατάστασης που ανακαλύφθηκαν τα τελευταία χρόνια στο άλλο γνωστό νησί του Σαρωνικού, στον Πόρο, με πλέον εξέχουσα την ανακάλυψη οργανωμένου οικισμού της ΠΕ II περιόδου στον Κάβο Βασίλη και την εξόρυξη τάλκη που τεκμηριώνεται και από τις γεωλογικές και εργαστηριακές μελέτες οι οποίες πραγματοποιήθηκαν υπό την καθοδήγηση του Δρα Ι. Μπασιάκου (**Ελ. Κονσολάκη-Γιαννοπούλου**). Στην καταληκτική ενότητα του τόμου, εξετάζονται περίοπτα ΠΕ μνημεία, με χαρακτηριστική περίπτωση την παρουσίαση και ανάλυση των ΠΕ τύμβων της Θήβας (**Βασ. Αραβαντινός και Κ. Ψαράκη**). Στην ίδια κατεύθυνση, εξετάζονται ως προς τις κατασκευαστικές τους λεπτομέρειες και τη λειτουργία τους, ως διοικητικά-οικονομικά κέντρα, μνημειακά πρωτοελλαδικά οικοδομήματα της νότιας και κεντρικής Ελλάδας (**Π. Θέμελης**). Τέλος, με βάση τα αποτελέσματα των γεωαρχαιολογικών ερευνών στη νοτιοδυτική Πελοπόννησο, ιδιαίτερα στην περιοχή των Ακοβίτικων Μεσσηνίας, ερευνάται η σχέση ανάμεσα στις περιβαλλοντικές αλλαγές του τοπίου και τις επιδράσεις στην εγκατάλειψη των αρχαίων θέσεων (**M. Engel et al.**).

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NEW VOLUME HELIKE IV

The new volume *Helike IV* was recently published by the Helike Society, edited by the Society President Prof. Dora Katsonopoulou. The volume is the fourth in the series of Proceedings of International Conferences on *Ancient Helike and Aigialeia*, organized by the Helike Society and held in the region of Aigialeia about every five years. In the new volume, under the specific title *PROTOHELLADIKA- The Southern and Central Greek Mainland*, are included 18 papers of well known Greek and foreign scholars regarding results of studies and research in Ancient Helike and other Early Helladic sites of the southern and central Greece.

In the first paper of the volume, an important issue of the Greek prehistory is discussed, namely the beginning of the Early Bronze Age in Greece and its possible connection with broader migration movements of Indo-European speakers in SE Europe and NW Anatolia (**J. Coleman**). Then, the role of local topography in supplying boundaries for EH settlements is examined, using examples from the Peloponnese and central Greece (**E. Weiberg**). The next group of papers refers to the recent discovery of a proto-urban EH II-III settlement in the area of Helike in Achaea. First, a synthesis of all finds from the excavations carried out between 2000-2007 is presented: architectural remains, pottery, objects of clay, bone and stone implements, unique vases and rare objects made of precious metals, suggesting a high level of urbanization for the settlement which

seems to have functioned as a central coastal settlement in the area of eastern Achaea in the third millennium BC (**D. Katsonopoulou**). Next, the rich in quantity and quality pottery is presented, its morphology is analyzed and its use and distribution inside the settlement is discussed (**St. Katsarou-Tzeveleki**). The study of the pottery is further illustrated by the presentation of the first results of petrographic assessment of houseware and storage pithoi from the settlement (**I. Iliopoulos et al.**). The products of a small scale flake industry in EH Helike relying primarily on local sources of raw material are presented (**N. Thompson**) and important data on dietary habits and specific activities of the settlement are discussed based on studies of representative assemblages from malacological (**L. Karali**) and faunal remains (**M. Fillios**). Lastly, environmental changes in the area of the EH settlement are discussed based on geoarchaeological research of the Helike Delta (**A. Koutsios and N. Kontopoulos**).

In the next session, the EH I period is examined in the area around the eastern Corinthian Gulf focusing on the EH I site of Aigeira in Achaea which did not continue into the next EH II period (**E. Alram-Stern**). On the contrary, new evidence from the neighboring Derveni in Korinthia suggests the existence of an EH II coastal settlement continuously inhabited from early to late EH II period (**Α. Σαπρή**). The impressive sealings from Lerna are re-examined in the light of new ideas (**M. Wiencke**), while sea rise and climatic changes are suggested as the factors of Early Helladic cultural change on the Argive plain (**C. Shriner et al.**). The late EH II pottery from the site of Kolonna on Aegina is analyzed next, examining in detail considerable innovations observed in phase C (**L. Berger**). The recently found EH sites on the island of Poros are also presented and discussed focusing on the rich finds from the important settlement partly excavated on the promontory of Kavos Vassili (**Ελ. Κονσολάκη-Γιαννοπούλου**). In the last part of the volume, are discussed monumental buildings of the Early Helladic period such as the EH burial mounds of Thebes (**Βασ. Αραβαντινός και Κ. Ψαράκη**), and corridor houses discovered in the southern and central Greece (**Π. Θέμελης**). Based on the results of geoarchaeological work in Akovitika of Messenia, the relationship between environmental changes and desertion of sites is examined (**M. Engel et al.**).

The volume *Helike IV* can be purchased in the bookstore “ANDROMEDA BOOKS” in Athens. Email: archeolo@otenet.gr; www.andromedabooks.gr

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Please visit the site: <http://onlinelibrary.wiley.com/doi/10.1111/ojoa.2012.31.issue-2/issuetoc> [Go there for links]

THE EARLIER PALAEOOLITHIC OF SYRIA
REINVESTIGATING THE EVIDENCE FROM
THE ORONTES AND EUPHRATES VALLEYS,
BY ANDREW SHAW

BAR S2341 2012: University of Southampton Series in Archaeology 7 The Earlier Palaeolithic of Syria Reinvestigating the evidence from the Orontes and Euphrates Valleys by Andrew Shaw. ISBN 9781407309248.

£38.00. xiv+238 pages; illustrated throughout. Price: £38.00

This monograph is concerned with understanding the behaviours and land use practices associated with earlier Palaeolithic hominins in Syria, through consideration of key archaeological assemblages from two important regions: the Orontes and Euphrates Valleys. The focus here is on three temporal bands – Earliest occupations (1.50 mya – 0.80 mya); the Lower Palaeolithic (800 kya – 350 kya); the Middle Palaeolithic (350 kya – 50 kya). The areas of the Orontes and Euphrates Valleys possess some of the most significant artefact collections from Syria, and indeed, the wider Near East. This is due to the fact that fluvial archives – such as those represented by the terrace staircases of the Rivers Orontes and Euphrates – are major repositories for earlier Palaeolithic material, and have historically been a primary research resource. They therefore provide a combination of an abundance of archaeological evidence and a significant archive of research activity.

Please visit the site:

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EΙΔΗΣΕΙΣ - NEWS RELEASE

ANCIENT TEMPLE DISCOVERED IN MESSINIA, BY ARETI KOTSELI

Archaeological research reveals an ancient temple in the mountains between Ilia and Messinia, opposite the well-known imposing temple of Epicurean Apollo.

The area around the newly discovered temple was full of architectural tools that were used to build a small temple, while former head of the 38th Ephorate of Antiquities, archaeologist Dr. Xenia Arapogianni explains that when the small temple was demolished in order to build a new one, topmasts, triglyphs and other parts of the ancient temple were found.

The excavation started back in 2010, revealing the temple as well as bronze items and a great number of iron weapons and particularly sharp spears probably dedicated to the temple's god, according to the Greek newspaper To Vima. A bronze figurine of a naked man, presumably a warrior as he's holding a spear in its arm, was also found by the archaeologists.

“That enables us to conclude that the temple was dedicated to a divine entity of war,” points out Dr. Arapogianni, underlying that the direct visual contact with the temple of Epicurean Apollo combined with the similarities of the votives, especially the spears, could mean that the temple was also dedicated to Apollo. That, however, does not exclude the possibility that goddesses Artemis or Athena were also worshipped there.

“In my opinion, that was the first temple [in comparison with the one of the Epicurean Apollo], dated in the Archaic period, approximately at the 6th century B.C. It was probably built by Spartans, who conquered Messinia, and when Messinians were later liberated, they must have built a bigger temple in the same spot,” stresses the archaeologist.

Please visit the site: <http://greece.greekreporter.com/2012/04/24/ancient-temple-discovered-in-messinia/>

POMPEII WALL COLLAPSES, DESPITE NEW CONSERVATION INITIATIVE, BY JOSEPHINE MCKENNA

A 2,000-year old wall surrounding an ancient villa at Pompeii has collapsed – just two weeks after the Italian government launched a 105 million euro project (£86 million) to save the precious archaeological site.

The Special Archaeological Superintendent for Naples and Pompeii confirmed the collapse of the red-frescoed wall next to an unidentified villa in an area already closed to the public.

The collapse of the wall is particularly embarrassing for the government as it follows several other incidents at the world heritage site in the past two year .

There is growing concern Italy's ability to protect it from further degradation and the impact of the local Mafia or Camorra.

Giulia Rodano, cultural affairs spokesman for the centre-left Italy of Values party, said there was a need to restore state funding that had been eroded by government cutbacks.

"How many walls have to fall, how much rain or snow should we expect to see a turnaround in state finance for the protection of cultural assets," Ms Rodano said.

"Without a continuous state programme for the conservation and restoration of our archaeological sites, extraordinary and sporadic intervention with European or private funds risks being ineffective."

The latest initiative launched in early April is funded by Italy and the European Union. At the launch Mario Monti, the Italian prime minister, said the project was designed to secure the buildings currently at risk in one of the most important cultural site in the world.

"We want to ensure that this is accomplished through honest and capable workers and companies while keeping away the organized crime that is still strong in this area," he added.

Pompeii was destroyed when a volcanic eruption from nearby Mount Vesuvius buried the city in ash in 79AD and it now attracts more than 2.5 million visitors a year. The site has fallen victim to various collapses in the last few years, prompting criticism from both Unesco and the European Union.

Please visit the site:

<http://www.telegraph.co.uk/news/worldnews/europe/italy/9219470/Pompeii-wall-collapses-despite-new-conservation-initiative.html>

ARCHAEOLOGISTS RESUME SEARCH FOR LAODICEA TEMPLE

A team of Iranian archaeologists has recently returned to an area within the town of Nahavand, western Iran, to search for traces of the Laodicea Temple.

They believe that the ancient Greek temple is buried beneath many residential units built by the locals on the site over the years.

“The construction of the units has caused such widespread destruction that there is little likelihood of finding signs of the temple,” team director Mehdi Rahbar told the Persian service of the Iranian Students News Agency on Sunday.

He said that Ukrainian-born French archeologist Roman Ghirshman began to conduct searches in the region in 1948 to find traces of the temple, but the searches were halted after he found widespread destruction in the archaeological strata.

A number of Iranian cultural officials announced in 2006 about their plan to buy a number of houses in a region in order to facilitate the excavation of the area.

In June 2005, a team of Iranian archaeologists led by Rahbar began searching for the temple in Nahavand, which is located 40 kilometers southeast of Malayer in Hamedan Province. However, no details were published about the study.

In 1943, archaeologists discovered an 85x36 centimeter ancient inscription of 30 lines written in Greek calling on the people of Nahavand to obey the laws of the government.

The inscription indicated the existence of the Laodicea Temple, which had been built by the Seleucid king who ruled Asia Minor, Antiochus III the Great (223-187 BC), for his wife Queen Laodicea.

Two other inscriptions as well as four bronze statuettes have been unearthed at the site, which are on display in the National Museum of Iran in Tehran. A number of capitals and bases of the temple’s columns excavated over the years are currently being used as decorations in Nahavand’s Hajian Bazaar and several other parts of the city.

Antiochus was the most distinguished of the Seleucids. Having made vassal states out of Parthia in present-day northeastern Iran and Bactria (an ancient country in Central Asia), he warred successfully against the Egyptian king Ptolemy V and in 198 BC obtained possession of all of Palestine and Lebanon.

He later became involved in a conflict with the Romans, who defeated him at Thermopylae in 191 BC and at Magnesia (now Manisa, Turkey) in 190 BC. As the price of peace, he was forced to surrender all his dominions west of the Taurus Mountains and to pay costly tribute.

Antiochus, who early in his reign had restored the Seleucid Empire, finally forfeited its influence in the eastern Mediterranean by his failure to recognize the rising power of Rome.

Please visit the site: <http://tehrantimes.com/arts-and-culture/97165-archaeologists-resume-search-for-laodicea-temple>

CLEOPATRA AND ANTONY'S CHILDREN **REDISCOVERED, ANALYSIS BY ROSSELLA** **LORENZI**

Cleopatra's twin babies now have a face. An Italian Egyptologist has rediscovered a sculpture of Alexander Helios and Cleopatra Selene, the offspring of Mark Antony and Cleopatra VII, at the Egyptian museum in Cairo.

Discovered in 1918 near the temple of Dendera on the west bank of the Nile, the sandstone statue was acquired by the Egyptian Museum in Cairo but has remained largely overlooked.

The back of the the 33-foot sculpture, catalogued as JE 46278 at the Egyptian museum, features some engraved stars -- likely indicating that the stone was originally part of a ceiling. Overall, the rest of the statue appears to be quite unusual.

"It shows two naked children, one male and one female, of identical size standing within the coils of two snakes. Each figure has an arm over the other's shoulder, while the other hand grasps a serpent,"

Giuseppina Capriotti, an Egyptologist at the Italy's National Research Council, told Discovery News.

The researcher identified the children as Alexander Helios and Cleopatra Selene, Antony and Cleopatra's twins, following a detailed stylistic and iconographic analysis published by the Polish Centre of Mediterranean Archaeology at the University of Warsaw.

Capriotti noticed that the boy has a sun-disc on his head, while the girl boasts a crescent and a lunar disc. The serpents, perhaps two cobras, would also be different forms of sun and moon, she said. Both discs are decorated with the udjat-eye, also called the eye of Horus, a common symbol in Egyptian art.

"Unfortunately the faces are not well preserved, but we can see that the boy has curly hair and a braid on the right side of the head, typical of Egyptian children. The girl's hair is arranged in a way similar to the so-called melonenfrisur (melon coiffure) an elaborated hairstyle often associated with the Ptolemaic dynasty, and Cleopatra particularly," said Capriotti.

The researcher compared the group statue with another Ptolemaic sculpture, the statue of Pakhom, governor of Dendera, now on display at the Detroit Institute of Arts, USA.

Cleopatra twins

"Stylistically, the statues have several features in common. For example, the figures have round faces, little chins and big eyes," Capriotti said.

Since the statue of Pakhom was dated to 50-30 B.C., she concluded that the twin sculpture was produced by an Egyptian artist at the end of the Ptolemaic period, after Roman triumvir Mark Antony recognized his twins in 37 B.C.

The babies weren't the firsts for Cleopatra. The Queen of Egypt had already given birth in 47 B.C., when she bore Julius Caesar a child, Caesarion. In 36 B.C. she presented Antony with another son, Ptolemy Philadelphus.

At the time of their birth in 40 B.C., the twins were simply named Cleopatra and Alexander. When they were officially recognized by their father three years later, as Antony returned to Antioch, in present Turkey, and Cleopatra joined him, they were named Alexander Helios (Sun), and Cleopatra Selene (Moon).

"Antony's recognition of the children was marked by an eclipsys. Probably for this reason, and to mythologize their twin birth, the children were added those celestial names. Although in Egypt the moon was a male deity, in the sculpture the genders were reversed according to the Greek tradition," Capriotti said.

Little is known of the children Cleopatra and Mark Antony left behind after their suicides in 30 B.C. following defeat in battle.

While Caesarion was murdered under Octavian's orders, the lives of the three offsprings of Cleopatra and Antony were spared.

Cleopatra Selene and Alexander Helios, then aged 10, and Ptolemy Philadelphus, then aged four, were moved to Rome and put under the care of Octavian's sister, Octavia whom Antony was married to.

Some years later, Alexander Helios and Ptolemy Philadelphus would disappear without a trace.

Only Cleopatra Selene survived. Married to King Juba II of Mauretania, she had at least one child, Ptolemy Philadelphus, likely named in honor of her little brother.

Her image was minted on coins along with Juba's, suggesting that she ruled as an equal partner.

"Now we have her portrayed as a child with her twin brother. Blending Egyptian myths and Greek culture, this sculpture fully represents Egypt at Cleopatra's time," Capriotti said.

Photos: Cleopatra's twin children, Alexander Helios and Cleopatra Selene have been possibly identified in this sandstone sculpture.

Credit: Giuseppina Capriotti.

Please visit the site: <http://news.discovery.com/history/cleopatras-twin-babies-120420.html> [Go there for pix]

ANCIENT 'WAVE OF POSEIDON' WAS REAL TSUNAMI, GEOLOGIST SAYS HE STUDIED EVIDENCE IN GREEK TOWN SAVED FROM A MARAUDING PERSIAN ARMY 2,500 YEARS AGO, BY ANDREA MUSTAIN

When the ocean rose up and saved a Greek town from a marauding Persian army nearly 2,500 years ago, renowned Greek historian Herodotus chalked it up to an act of the gods.

Yet new evidence suggests his account of divine intervention is firmly rooted in the earthly realm, and was actually a tsunami, according to a researcher who spoke here Thursday at the annual meeting of the Seismological Society of America.

"This is historical stuff, but you have to interpret it in a scientific way," said Klaus Reicherter of Germany's Aachen University, who studied geological evidence of the event.

Pressed Persians

Some 50 years after the 479 B.C. event, Herodotus wrote his account.

"There came to be a great ebb of the sea backwards, which lasted for a long time," he wrote.

As the sea rolled back before them, the Persians surged forward toward modern-day Kassandra, a peninsula in northern Greece, to finish a town now called Nea Potidea. But before the invaders could reach dry land, their good luck turned sour.

"Then there came upon them a great flood-tide of the sea, higher than ever before, as the natives of the place say, though high tides come often," Herodotus wrote. The Persians were washed away and the town was saved.

Herodotus, like the villagers, saw the savior wave as the avenging hand of Poseidon, god of the sea, punishing the invaders for some offense, but Reicherter said the account accurately describes the phases of a tsunami. Tsunamis, he said, pose a far greater threat to the northern Aegean Sea region than many realize.

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"We wanted to see if these historical accounts are correct and then try to get an assessment of the coastal areas — are they safe or are they not safe?" Reicherter said. The question is especially important in light of the region's popularity with beachgoers during summer months, he added. [History's Most Overlooked Mysteries]

Tsunami forensics

The telltale signs of tsunami action are buried not just in ancient texts but in the ground near the town described by Herodotus, where research teams uncovered layers of sand apparently carried far inland by a tsunami.

Furthermore, geological conditions in the area would have provided the ideal means for producing large waves, Reicherter told OurAmazingPlanet.

Earthquakes and landslides in the region, combined with a colossal, bathtub-shaped basin in the seafloor near the northwestern Greek coast, are capable of producing tsunamis from 7 to 16 feet (2 to 5 meters) high, according to models Reicherter and colleagues ran based on available data.

To further back their suspicions, the team dated shells found in the sand deposited by the tsunami. "They fit quite nicely: around 500 B.C., plus or minus 25 to 30 years," Reicherter said.

The research is part of an ongoing effort to hunt down and assess ancient tsunamis. The work can help show what areas are vulnerable to damaging waves and can help officials better prepare for the next big one, Reicherter said.

An earlier version of this report incorrectly set the timing of the tsunami as occurring 1,500 years ago.

Please visit the site:

http://www.msnbc.msn.com/id/47107517/ns/technology_and_science-science/#.T5Qi23lnvf0 [Go there for map]

DNA TRACES CATTLE BACK TO A SMALL HERD DOMESTICATED AROUND 10,500 YEARS AGO

All cattle are descended from as few as 80 animals that were domesticated from wild ox in the Near East some 10,500 years ago, according to a new genetic study.

An international team of scientists from the CNRS and National Museum of Natural History in France, the University of Mainz in Germany, and UCL in the UK were able to conduct the study by first extracting DNA from the bones of domestic cattle excavated in Iranian archaeological sites. These sites date to not long after the invention of farming and are in the region where cattle were first domesticated.

The team examined how small differences in the DNA sequences of those ancient cattle, as well as cattle living today, could have arisen given different population histories. Using computer simulations they found that the DNA differences could only have arisen if a small number of animals, approximately 80, were domesticated from wild ox (aurochs).

The study is published in the current issue of the journal *Molecular Biology and Evolution*. Dr Ruth Bollongino of CNRS, France, and the University of Mainz, Germany; lead author of the study, said: "Getting reliable DNA sequences from remains found in cold environments is routine.

"That is why mammoths were one of the first extinct species to have their DNA read. But getting reliable DNA from bones found in hot regions is much more difficult because temperature is so critical for DNA survival. This meant we had to be extremely careful that we did not end up reading contaminating DNA sequences from living, or only recently dead cattle."

The number of animals domesticated has important implications for the archaeological study of domestication.

Prof Mark Thomas, geneticist and an author of the study based at the UCL Research Department of Genetics, Evolution and Environment: "This is a surprisingly small number of cattle. We know from archaeological remains that the wild ancestors of modern-day cattle, known as aurochs, were common throughout Asia and Europe, so there would have been plenty of opportunities to capture and domesticate them."

Prof Joachim Burger, an author of the study based at the University of Mainz, Germany, said: "Wild aurochs are very different beasts from modern domestic cattle.

"They were much bigger than modern cattle, and wouldn't have had the domestic traits we see today, such as docility. So capturing these animals in the first place would not have been easy, and even if some people did manage snare them alive, their continued management and breeding would still have presented considerable challenges until they had been bred for smaller size and more docile behavior."

Archaeological studies on the number and size of prehistoric animal bone have shown that not only cattle, but also goats, sheep and pigs were all first domesticated in the Near East. But saying how many animals were domesticated for any of those species is a much harder question to answer. Classical techniques in archaeology cannot give us the whole picture, but genetics can help - especially if some of the genetic data comes from early domestic animals.

Dr Jean-Denis Vigne, a CNRS bio-archaeologist and author on the study, said: "In this study genetic analysis allowed us to answer questions that – until now –archaeologists would not even attempt to address.

"A small number of cattle progenitors is consistent with the restricted area for which archaeologists have evidence for early cattle domestication ca. 10,500 years ago. This restricted area could be explained by the fact that cattle breeding, contrary to, for example, goat herding, would have been very difficult for mobile societies, and that only some of them were actually sedentary at that time in the Near East."

Dr Marjan Mashkour, a CNRS Archaeologist working in the Middle East added "This study highlights how important it can be to consider archaeological remains from less well-studied regions, such as Iran.

Without our Iranian data it would have been very difficult to draw our conclusions, even though they concern cattle at a global scale".

Notes for editors

1. For more information or to interview Professor Mark Thomas, please contact Clare Ryan in the UCL Media Relations Office on tel: 44-20-3108-3846, mobile: 44-07747-565-056, out of hours 44-7917-271-364, e-mail: clare.ryan@ucl.ac.uk.

2. 'Modern Taurine Cattle descended from small number of Near-Eastern founders' is published in the current issue of Molecular Biology and Evolution. Journalists can obtain copies of the paper by contacting UCL Media Relations.

3. Images for download are available from:

<http://www.uni-mainz.de/presse/31690.php>

Please visit the site: http://www.eurekalert.org/pub_releases/2012-03/ucl-dtc032712.php

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FROM FORAGING TO FARMING: THE 10,000-YEAR REVOLUTION

Excavation of 19,000-year-old hunter-gatherer remains, including a vast camp site, is fuelling a reinterpretation of the greatest fundamental shift in human civilisation – the origins of agriculture.

The moment when the hunter-gatherers laid down their spears and began farming around 11,000 years ago is often interpreted as one of the most rapid and significant transitions in human history – the ‘Neolithic Revolution’.

By producing and storing food, Homo sapiens both mastered the natural world and took the first significant steps towards thousands of years of runaway technological development. The advent of specialist craftsmen, an increase in fertility and the construction of permanent architecture are just some of the profound changes that followed.

Of course, the transition to agriculture was far from rapid. The period around 14,500 years ago has been regarded as the point at which the first indications appear of cultural change associated with agriculture: the exploitation of wild grains and the construction of stone buildings. Farming is believed to have begun in what is known as the Fertile Crescent in the Levant region, which stretches from northern Egypt through Israel and Jordan to the shores of the Persian Gulf, and then occurred independently in other regions of the world at different times from 11,000 years ago.

Recent evidence, however, has suggested that the first stirrings of the revolution began even earlier, perhaps as far back as 19,000 years ago. Stimulating this reinterpretation of human prehistory are discoveries by the Epipalaeolithic Foragers in Azraq Project (EFAP), a group of archaeologists and bioarchaeologists working in the Jordanian desert comprising University of Cambridge’s Dr. Jay Stock, Dr. Lisa Maher (University of California, Berkeley) and Dr. Tobias Richter (University of Copenhagen).

Over the past four years, their research has uncovered dramatic evidence of changes in the behaviour of hunter-gatherers that casts new light on agriculture’s origins, as Dr. Stock described: “Our work suggests that these hunter-gatherer communities were starting to congregate in large numbers in specific places, build architecture and show more-complex ritual and symbolic burial practices – signs of a greater attachment to a location and a changing pattern of social complexity that imply they were on the trajectory toward agriculture.”

Fertile Crescent

Working at the fringes of the Fertile Crescent, at sites in the Azraq Basin and the marshlands of Jordan, the EFAP team is excavating the archaeological remains of the hunter-gatherers who occupied the region. Such sites have been under studied, said Dr Stock: “Because these early hunter-gatherers have been perceived as building only transient camp sites, they have been largely disregarded in explanations of the development of agriculture. Instead, excavations have focused on the later ‘Natufian’

period, beginning around 14,500 years ago, since this period more clearly shows cultural precursors of the transition to agriculture.”

Today, the Azraq Basin is a 12,000 sq km area of dusty, wind-blown desert, and a very challenging place to work. Temperatures can soar to 45°C, requiring the researchers to start field work at 5 am and finish by midday when the heat and winds become too strong to allow work to continue.

But when the first humans were leaving Africa, the open grasslands and lush marshlands of the Fertile Crescent teemed with gazelle, antelope and plant life. Given this region is situated at the crossroads between Africa and the rest of the world, it is perhaps unsurprising that it should be the site of regional agricultural innovation.

Few previous archaeological excavations have been carried out in this inhospitable terrain, most instead focusing on regions closer to the Mediterranean. With funding from the Arts and Humanities Research Council, the researchers set out four years ago to redress the balance.

Complex burials

Dr. Stock’s expertise lies in the analysis of hunter-gatherer bones. Over the past 15 years, he has analysed over 1,400 skeletons from around the world to understand what it is about early humans that made them such successful colonisers of the natural environment.

One of the most startling of the researchers’ findings in Jordan has been the hunter-gatherer graves. Evidence suggests that, far from simple burials, the hunter-gatherers had elaborate mortuary and sociocultural practices. In one grave in ‘Ayn Qasiyya, an adult male was placed in marshland in a sitting position, and was likely to have been tightly wrapped in cloth. A previous finding by another archaeologist at Kharaneh IV was a burial of an older man underneath a hut floor, his age suggesting that he would have required the care of others in life.

At another site, ‘Uyun-al-Hammam, a University of Toronto-based project led by Dr. Maher has excavated a total of 11 burials, some of which show elaborate mortuary treatments. Indeed, one grave that includes a human buried together with a fox, said Dr. Maher: “suggests a close emotional or symbolic tie between humans and foxes prior to the first domesticated animal – the dog – and shows continuity in burial and social practices with the later Neolithic”. Dr. Stock’s study of the human remains demonstrates that these people were ancestral to the later farmers.

The researchers argue that these examples may represent an increasing cultural sophistication and a greater complexity in the relationship between humans and animals – trends that had only previously been identified in later time periods.

Mega camp site

A major focus of the work of the EFAP team over the past four years has been the excavation of the site of Kharaneh IV, in the Azraq Desert of eastern Jordan. The site is

much more than the sort of temporary camp site normally ascribed to hunter-gatherer groups.

Covering almost two hectares, the 19,000-year-old site was occupied for 1,200 years and is, as Dr. Stock described, “so huge, it’s the earliest sign of human activity that is large enough to be visible on Google Earth.”

“To produce the debris of stone tools and bones, in some places almost 3 m deep, we believe that many groups of hunter-gatherers would meet and live together for several months of the year before splitting into mobile groups at other times.”

The team is researching the area in astonishing detail – in a technique known as 100% flotation, every square centimetre excavated is floated to check for plant remains and charcoal. As Dr. Richter pointed out: “even very small remains are providing very important clues towards our understanding of the relationship between prehistoric humans and their habitat”.

To date, they have found plant remains, animal bones carved with repeated incised motifs, stones carved with geometric patterns, stone tools in their thousands, hearths, pierced shells and, just recently, oval hut structures. As the work continues, all indications point towards an advanced cultural and technological complexity in the exploitation of bone, shell, plants and architecture. “The size of the site, combined with evidence for huts and other symbolic goods, imply that Kharaneh IV was long-term and repeatedly occupied,” said Dr. Stock. “It could be regarded as a precursor to later farming villages.”

The revolution that wasn’t

The team’s discoveries extend many aspects of the behavioural complexity associated with the Neolithic to about 10,000 years earlier, pushing back the true roots of the transition to agriculture.

“On evolutionary timescales, the transition to agriculture can undoubtedly be regarded in revolutionary terms,” said Dr Stock. “But, we can now see this as a culturally dynamic process that began much earlier than previously thought.”

“This picture would not have come together through the excavation of one site alone,” he added. “The burial complexity of ‘Uyun-al-Hammam and ‘Ayn Qasiyya, together with the architecture and size of the settlement at Kharaneh IV, collectively offer glimpses of a protracted period in which humans worked through the cultural and biological changes that needed to happen before village life and the systematic exploitation of grain could emerge.”

ANCIENT GREEK MURDER COURT FOUND IN ATHENS, BY MARIANNA TSATSOU

Part of the ancient Greek court Palladion, which tried murder cases from Classical until the Roman Ages, was discovered along with movable findings in downtown Athens.

In the 60's, archaeologist Ioannis Travlos discovered another part of the court, including the entrance. But now, excavations provide interesting clues about the court's function. The lodge found in the southern part of the court is believed to be the hearing process room.

Palladion Court, according to ancient Greek myth, was dedicated to Goddess Athena in memory of her friend Pallada. The Greek Goddess injured her friend accidentally while they were together, resulting in death.

As for the moving items, ceramic ballot boxes and coins puzzle the image of the ancient court. Judges may have had to vote for the innocent or guilty by choosing one of the two ballot boxes to throw their inscribed vote in.

Only cases of manslaughter were tried in the court. Murders characterized as "fair," such as those caused due to wars or adultery, were tried in the Delphinion Court.

Please visit the site: <http://greece.greekreporter.com/2012/04/17/ancient-greek-murder-court-found-in-athens/>

WOMAN GLADIATOR (AND TOPLESS TOO)

A small bronze statue dating back nearly 2,000 years may be that of a female gladiator, a victorious one at that, suggests a new study.

If confirmed the statue would represent only the second depiction of a woman gladiator known to exist.

The gladiator statue shows a topless woman, wearing only a loincloth and a bandage around her left knee. Her hair is long, although neat, and in the air she raises what the researcher, Alfonso Manas of the University of Granada, believes is a sica, a short curved sword used by gladiators. The gesture she gives is a "salute to the people, to the crowd," Manas said, an action done by victorious gladiators at the end of a fight.

The female fighter is looking down at the ground, presumably at her fallen opponent.

The "precise real-life" details of the statue suggest the depiction was inspired by an actual person, a real woman who fought, Manas told LiveScience in an interview. [Photos: Gladiators of the Roman Empire]

It's not known where the statue was originally found, though it is currently in the Museum für Kunst und Gewerbe Hamburg, Germany.

The rarity of such statues likely reflects the idea that female gladiators in ancient Rome were scarce. They were banned by Emperor Septimius Severus in A.D. 200 with only about a dozen references to them in ancient writing surviving to present day. The only other known depiction of them is a carved relief from the site of Halicarnassus (now in the British Museum) that shows two female gladiators fighting.

There have been claims made in the past of burials of female gladiators being uncovered, but none has attracted widespread support among scholars.

Identifying the gladiator

Scholars had initially suggested the statue represented a female athlete scraping herself with a strigil (a cleaning implement that can look similar to a sword). However, Manas noted several aspects of the artifact to suggest it instead represented a female gladiator.

One was the woman's stance. It would make little sense for an athlete to raise a cleaning instrument high in the air while looking down at the ground. However, raising a sword into the air was a common victory pose among ancient gladiators.

In addition, female athletes in the Roman world did not go completely topless, as they would wear a bikini or "a tunic that left one breast exposed," Manas pointed out. "In any case, female athletes never performed with bare breasts," at least not with both exposed. Gladiators, on the other hand, tended to be slaves or people of low social status; depicting them topless would have been considered more acceptable. The bandage the woman is wearing on her knee is also a common feature of gladiators. [Roman Gladiator's Gravestone Reveals Fatal Foul]

Altogether, this evidence "seems to indicate that the statuette at the MKG [the museum] represents a gladiator, thus becoming the second piece of visual evidence we have of female gladiators," Manas writes in a recent issue of the International Journal of the History of Sport.

Anna McCullough, a professor at Ohio State University who has written about female gladiators, but is not affiliated with the research, is cautiously optimistic about this identification. "The gesture is far more similar to gestures of victory than it is to any depictions of athletes actually scraping themselves," McCullough said. "I think it certainly resembles a female gladiator more than (an) athlete, and I'm kind of happy to tentatively say that it is a gladiator in those terms."

One potential problem, she points out, is the fact that the "gladiator" is portrayed without a helmet, greaves (shin protectors) or other form of armor.

"The reason for this woman being topless might simply be that whoever made it wanted to sort of emphasize the fact that this is a female gladiator and not a male gladiator," she said, still "for her to be completely without armor is a little bit odd."

Both Manas and McCullough pointed out that it wasn't uncommon for men to go into the arena topless, although typically equipped with defensive gear such as a helmet, shield, greaves or even a breastplate.

McCullough said that, in real life, female gladiators would likely have worn more than a loincloth and bandage into the arena. Without the protective gear, the fighters would have been killed in large numbers. "If gladiators died every time that there was a fight in the arena, you would have a really hard time keeping up your population of gladiators in your gladiatorial school," she said.

Manas said that in real life, a gladiator like this would have had at least a shield and possibly a helmet. Perhaps she had taken off the helmet for the victory gesture or because the ancient artist wanted to show her hair, he speculated. Or maybe she did in fact go into the arena without a warrior's helmet so that people could see her face. As for her shield, she may have been holding that in her right hand, which is no longer present on the statue.

Erotic Romans?

Manas argues in his paper that, in addition to the athleticism typical of gladiator matches, female gladiator contests would have had an element of eroticism for Roman men.

"No doubt the particular appearance of female gladiators (with their breasts uncovered) would also cause an erotic impact on viewers," he writes. "In a society so militarised as the Roman one, in which weapons were so popular (but exclusive to men), to see a woman in that role, so different to the usual feminine one, wearing the armour of gladiators and showing so much of her anatomy, should also stimulate the imagination and the libido of spectators." [10 Innovations that Revolutionized Combat]

McCullough has a different interpretation. "In the literary texts that we have, female gladiators are not described in any kind of an erotic context or using erotic language at

all," she said. The authors of those texts, she said, simply note that "women fought in the arena and they fought very fiercely and we were excited to see them."

If there were any sexual implication of the nude gladiator, it would've been due to her low social status. "In the Roman mind, there would have [been] certain associations with the sexual availability of slaves," McCullough said. "Slaves were sort of expected to be sexually available to anyone at anytime, especially their masters."

To, "depict a female gladiator, or a slave, nude was really no big deal," she said. "It was an indication of their extremely low status."

Please visit the site: <http://www.livescience.com/19729-female-gladiator-statue-rome.html> [Go there for photo]

ARCHAEOLOGISTS EXCAVATE ANCIENT PHOENICIAN PORT CITY

Archaeological team will explore evidence of ancient harbor structures, including a possible monumental Roman villa.

The ruins of the site rest atop a sandstone hill, hugging the far northern coast of the current State of Israel near the border with Lebanon. One can see later-period standing structures that provide the backdrop for what is now a national park and beach resort. But below the surface, and beneath the ocean waves, lie the remains of an ancient harbor town that reach back in history to as long ago as Chalcolithic times (4500 - 3200 BC). After decades, a team of archaeologists will return to the site to investigate evidence of a settlement that played a chief role in the ancient commerce of the area and the civilizations that crossed and controlled its strategic location.

Known today as Tel Achziv, its remnants have been explored and excavated before, by Moshe Prausnitz from 1963 through 1964 and, in the vicinity of the site, by E. Ben-Dor, M. Prausnitz and E. Mazar, who uncovered large-scale Phoenician cemeteries. Anciently, it was a fortified Canaanite harbor city protected by a massive rampart, rising to prominence as a major Phoenician port for maritime commerce, connected to a coastal road for trade. The city flourished under the Phoenicians during the ninth century, was conquered by King Sennacherib of Assyria at the end of the eighth century, and continued to function as an important port city during the Hellenistic and Roman periods. The city was mentioned in the writings of Josephus Flavius, who referred to it as the place where Herod's brother was captured, and was also referenced by Plinius (23-79AD) and appears in the Claudius Ptolemy World map (~150AD). It functioned later as an administrative center during Crusader times.

Please visit the site: <http://popular-archaeology.com/issue/march-2012/article/archaeologists-excavate-ancient-phoenician-port-city>

WADI ABU SUBEIRA, EGYPT: **PALAEOLITHIC ROCK ART ON THE VERGE** **OF DESTRUCTION**

"In 2007 one of the most important recent archaeological discoveries in Egypt were made in Wadi (Chor) Abu Subeira near Aswan: A team led by Adel Kelany of the Supreme Council of Antiquities (SCA) found a stunning assemblage of petroglyphs dating to the Late Palaeolithic era (c. 15-20.000 years ago). Ongoing surveys have shown that the initial find was the tip of the iceberg only, which makes Subeira perhaps the richest place of "Ice-Age" art in North Africa, comparable to the site of Qurta, 50 km to the north. Unfortunately, the Subeira rock art is extremely threatened by modern mining, which lately has proven to be even more widespread than previously thought: A truly unique testimony of mankind's early art is now on the verge of destruction."

Please visit the site: <http://per-storemyr.net/2012/04/06/wadi-abu-subeira-egypt-palaeolithic-rock-art-on-the-verge-of-destruction/> [Go there for full text, pix and access to downloads]

ANCIENT EGYPTIAN COTTON UNVEILS SECRETS OF DOMESTICATED CROP EVOLUTION

Present-day cotton. Scientists studying 1,600-year-old cotton from the banks of the Nile have found what they believe is the first evidence that punctuated evolution has occurred in a major crop group within the relatively short history of plant domestication. (Credit: © Zorro12 / Fotolia)

Scientists studying 1,600-year-old cotton from the banks of the Nile have found what they believe is the first evidence that punctuated evolution has occurred in a major crop group within the relatively short history of plant domestication.

The findings offer an insight into the dynamics of agriculture in the ancient world and could also help today's domestic crops face challenges such as climate change and water scarcity.

The researchers, led by Dr Robin Allaby from the School of Life Sciences at the University of Warwick, examined the remains of ancient cotton at Qasr Ibrim in Egypt's Upper Nile using high throughput sequencing technologies.

This is the first time such technology has been used on ancient plants and also the first time the technique has been applied to archaeological samples in such hot countries.

The site is located about 40 km from Abu Simbel and 70 km from the modern Sudanese border on the east bank of what is now Lake Nasser.

They also studied South American samples from sites in Peru and Brazil aged between 800 and nearly 4,000 years old.

The results showed that even over the relatively short timescale of a millennia and a half, the Egyptian cotton, identified as *G. herbaceum*, showed evidence of significant genomic reorganisation when the ancient and the modern variety were compared.

However closely-related *G. Barbadosense* from the sites in South America showed genomic stability between the two samples, even though these were separated by more than 2,000 miles in distance and 3,000 years in time.

This divergent picture points towards punctuated evolution -- long periods of evolutionary stability interspersed by bursts of rapid change -- having occurred in the cotton family.

Dr Allaby said: "We think of evolution as a very slow process, but as we analyse more genome information we can see that there's been a huge amount of large-scale proactive change during recent history."

"Our results for the cotton from Egypt indicate that there has been the potential for more adaptive evolution going on in domesticated plant species than was appreciated up until now.

"Plants that are local to their particular area will develop genes which allow them to better tolerate the stresses they find in the environment around them.

"It's possible that cotton at the Qasr Ibrim site has adapted in response to extreme environmental stress, such as not enough water.

"This insight into how domesticated crops evolved when faced with environmental stress is of value for modern agriculture in the face of current challenges like climate change and water scarcity."

For archaeologists, the results also shed light on agricultural development in the ancient world.

There has long been uncertainty as to whether ancient Egyptians had imported domesticated cotton from the Indian subcontinent, as had happened with other crops, or whether they were growing a native African variety which had been domesticated locally.

The study's findings that the Qasr Ibrim seeds were of the *G. herbaceum* variety, native to Africa, rather than *G. arboreum*, which is native to the Indian subcontinent, represents the first molecular-based identification of archaeobotanical cotton to a species level.

Dr Allaby said the findings confirm there was an indigenous domestication of cotton in Africa which was separate from the domestication of cotton in India.

"The presence of cotton textiles on Egyptian and Nubian sites has been well documented but there has always been uncertainty among archaeologists as to the origin of these.

"It's not possible to identify some cotton varieties just by looking at them, so we were asked to delve into the DNA.

"We identified the African variety -- *G. herbaceum*, which suggest that domesticated cotton was not a cultural import -- it was a technology that had grown up independently."

The study was funded by NERC.

Please visit the site:

<http://www.sciencedaily.com/releases/2012/04/120402093938.htm>

FOSSIL FOOT INDICATES NEW PREHUMAN SPECIES, BY JOHN NOBLE WILFORD

Now it seems that Lucy shared eastern Africa with another prehuman species, one that may have spent more time in trees than on the ground.

A 3.4-million-year-old fossil foot found in Ethiopia appears to settle the long-disputed question of whether there was only a single line of hominins — species more closely related to humans than to chimpanzees — between four million and three million years ago. The fossil record for that period had been virtually limited to the species *Australopithecus afarensis*, made famous by the 3.2-million-year-old Lucy skeleton.

Of perhaps more importance, scientists report in the journal *Nature*, published online Wednesday, the newfound foot not only belonged to a different species but also had evolved a distinctive mode of locomotion, which scientists described as “equivocal.” It clung to the trees and never adapted to terrestrial mobility outright.

The Lucy species had long before evolved almost humanlike upright walking, bipedality, as attested by the Laetoli footprints in Tanzania from as early as 3.7 million years ago. This other species was still built for climbing trees and grasping limbs. It was capable of walking, though less efficiently and probably at an awkward gait.

At a pivotal period in prehuman evolution, the discoverers concluded, two lines of hominins practiced contrasting locomotion behavior. Their feet, mostly, told the tale: the divergent, opposable big toe, long digits and other bones of the newfound species did not match the feet of *afarensis*. Lucy’s foot had a strong arch and the big toe was lined up with the other four digits, much like the feet of modern humans and all critical for effective bipedality, while retaining some agility for climbing trees.

Yohannes Haile-Selassie, a paleoanthropologist at the Cleveland Museum of Natural History in Ohio, and his colleagues said the species the foot belonged to remains undetermined, for lack of any cranial or dental remains associated with the specimen. But they said the foot was strikingly similar to the earlier hominin *Ardipithecus ramidus*, nicknamed Ardi, which lived 4.4 million years ago, also in what is now Ethiopia.

Ardi’s foot also had a divergent big toe, similar to those of apes and gorillas, for tree climbing, though Ardi was an occasional upright walker.

Daniel E. Lieberman, a human evolutionary biologist at Harvard who was not involved in the research, wrote in a commentary for the journal that the hominin foot “is a valuable addition to the fossil record as it extends the existence of *Ardipithecus*-like feet by a million years.”

This and other recent discoveries, Dr. Lieberman said, indicate “that there was more diversity in hominin locomotion than we had previously thought, and not all of it took place on the ground.”

Donald C. Johanson, the discoverer of the original afarensis specimen Lucy, admired this new member of the rarefied fossil kingdom. “It’s a lovely little foot to have,” he said, agreeing that its similarity to the Ardipithecus mode of locomotion suggested the existence of “two parallel lineages in this long time period.”

Dr. Johanson, who is the founding director of the Institute of Human Origins at Arizona State University, discovered the Lucy skeleton in 1974, only 30 miles from the site of this latest find. In February 2009, at a place in the central Afar region known as Burtele, a member of Dr. Haile-Selassie’s team, Stephanie Melillo, spotted the first bone fragment eroding out of sandstone.

Eventually, eight bones of a hominin foot’s usual 27 were recovered and analyzed. It was a right foot, and, there being no duplication of parts, it was thought to be from a single individual. Finding any hominin foot bones that old is rare, Dr. Haile-Selassie said. They are small and delicate, especially vulnerable to scavenging and decay.

Beverly Z. Saylor of Case Western Reserve University in Cleveland, a team member and an author of the report, said that at the time this hominin lived, the region had many lakes and streams with wooded shores, thus ample opportunities for arboreal habits. The dating of sediments where the bones were embedded was conducted by the Berkeley Geochronology Center in California.

Another author, Bruce M. Latimer of Case Western Reserve, said the findings clearly showed that the adaptation to bipedality, though considered one of the decisive transitions in early human evolution, was not a single, isolated event. One group, the Lucy species, relinquished the arboreal habitat and became functionally committed, long-distance walkers. For reasons unknown, another group, represented by the Burtele foot, maintained a climbing foot and stayed at least part time in the trees.

In hindsight, Dr. Latimer said, “it is apparent which group succeeded.” Homo erectus appears to have been the first to walk on a fully modern foot.

The discoverers themselves, as well as other paleoanthropologists, cited the need for more fossils to determine to bodies that went with such a foot and their possible relationship with the much earlier Ardipithecus.

“The implications of this limb diversity for human evolution,” Dr. Lieberman wrote, “will require researchers to continue getting their feet dirty in the field and the lab.”

Dr. Johanson said the Burtele site was a relatively new area of exploration and so the prospects were good for “finding the critical teeth and jaws needed as the next step.”

Ian Tattersall, a paleoanthropologist at the American Museum of Natural History in Manhattan, who said he thought the Burtele foot “really interesting” and confirmation of hints of diversity in hominin mobility at this period, still cautioned against “jumping to too many conclusions as yet.”

New fossil discoveries are not always blessed with immediate consensus. When the 3.5-million-year-old Kenyanthropus platyops was found in Kenya a decade ago, the

discoverers reported that it indicated the presence of another species alongside Australopithecus, but that interpretation remains in some doubt. Likewise, a few scientists remain skeptical of the status of Ardipithecus as a hominin; they argue that it was actually an ape that evolved limited bipedalism.

Dr. Lieberman seemed to be touched also by an unscientific atavistic influence.

“Human evolution is often portrayed as a triumph of bipedalism, but who among us has not occasionally regretted our species’ comparative clumsiness in trees?” he wrote. “I, for one, am pleased to know that some hominins retained feet well adapted for arboreality millions of years after we started to walk on two feet.”

Please visit the site: <http://www.nytimes.com/2012/03/29/science/african-foot-fossil-indicates-another-hominin-species-lived-with-lucy.html>
