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Πληροφοριακό Δελτίο της Ελληνικής Αρχαιομετρικής Εταιρείας

- Απρίλιος 2014 -

Wisdom outweighs any wealth.

(Sophocles)

Newsletter of the Hellenic Society of Archaeometry

- April 2014 -

Nr. 157

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ΣΥΝΕΛΠΙΑ-CONFERENCES/WORKSHOPS

INTERNATIONAL CONFERENCE ON COASTAL LANDSCAPES, MINING ACTIVITIES & PRESERVATION OF CULTURAL HERITAGE, MILOS 2014, 1ST ANNOUNCEMENT

Venue: Milos Conference Center - George Eliopoulos, 17-20 SEPTEMBER 2014

ORGANISERS:

NATIONAL & KAPODISTRIAN UNIVERSITY OF ATHENS [UoA]
S&B INDUSTRIAL MINERALS SA [S&B]

ORGANIZING COMMITTEE:

TH. ANDROULAKIS S&B., A. VOGLI S&B., M.STAMATAKIS UoA, M. ANASTASATOU UoA, S. ANTONOPOULOU UoA, A. TSOUTSIA UoA, N. PAPAVALASOPOULOU UoA, A. DOXANAKI UoA, D. STABOLIADI UoA

Participants

IN ADDITION TO INVITED ORAL PRESENTATIONS, THERE WILL BE **POSTER PRESENTATIONS** [TWO SESSIONS] BY COLLEAGUES AND NEW SCIENTISTS [MSc & PhD students], EXHIBITED AT THE CONVENTIONAL CENTER "G. ELIOPOULOS"

AUDIENCE: CIVIL ENGINEERS, MINING ENGINEERS, CHEMICAL ENGINEERS, ARCHAEOLOGISTS, GEOSCIENTISTS, CONSERVATORS, MUSEIOLOGISTS, GRADUATED AND POST-GRADUATED STUDENTS

CONFERENCE MAIN THEMES:

1- GEOLOGICAL, ARCHAEOLOGICAL AND MINING HERITAGE

SILICEOUS AND VOLCANIC ROCKS AS TOOLS FOR ANCIENT HUMAN COMMUNITIES

MINING AND CIVIL ENGINEERING WORKS IN BEDROCK IN THE ANTIQUITY

MEDICINAL "EARTHS" IN THE ANTIQUITY

GEOPATHS - GEOPARKS - FOSSIL FORESTS

NATURAL AND ANTHROPOGENIC CAVES IN MILOS

GEOLOGICAL AND ARCHAEOLOGICAL RESEARCH IN COASTAL AND MARINE ENVIRONMENT

2- REPAIR & RESTORATION OF ANCIENT AND HISTORICAL BUILDINGS

LIME MORTARS

GYPNUM MORTARS

CEMENTITIOUS MORTARS

BINDERS

NATURAL STONES

3- INDUSTRIAL MINERALS AND THE ENVIRONMENT

OPEN CAST MINING AND RECLAMATION

ABANDONED MINES AND ENVIRONMENTAL CONSIDERATIONS

USE OF FORESTRY KNOWLEDGE FOR A SUCCESSFUL REHABILITATION OF QUARRIES
THE INDUSTRIAL MINERALS AS SOLVENTS OF ENVIRONMENTAL PROBLEMS

PROVISIONAL PROGRAM

DAY 1st 17/9

OPENING CEREMONY, MILOS MINING MUSEUM, Adamas Bay 19.00-21.00

DAY 2nd: 18/9

8.30-9.30 REGISTRATION [fees: 50€ STUDENTS, 80€ OTHER PARTICIPANTS]

09.30-10.00: WELCOMING ADDRESS/PUBLIC AUTHORITIES

SESSION: REPAIR & RESTORATION OF ANCIENT AND HISTORICAL BUILDINGS

10.00-10.45: HUGHES J. & MIDDENDORF B.

Title: MORTARS FOR THE RESTORATION OF HISTORIC MONUMENTS: CHARACTERIZATION AND FORMULATION

10:45-11:10: HUGHES J.

Title: APPROACHES TO CONSERVATION-THE RELATIONSHIP BETWEEN REQUIREMENTS OF CONSERVATION, CHARACTERISATION AND REPAIR STRATEGY

11.10-11:30 COFFEE BREAK

11.30-11:55 THEODORIDOU M. & IOANNOY I.

Title: STANDARDISED AND NON-STANDARDISED TESTS FOR THE CHARACTERISATION OF NATURAL BUILDING AND DECORATIVE STONES

11.55-12.20 MIDDENDORF B.

Title: GYPSUM BASED MORTARS WITH INCREASED WATER RESISTANCE FOR EXTERNAL RESTORATION OF HISTORIC MASONRY

12.20-12.45 LAMBROPOULOS V.

Title: CONSERVATION OF FOSSILIZED FORESTS' STRUCTURAL MATERIAL

12.45-13.10 AGGISTALIS G.

Title: DESCRIPTION, PATHOLOGY AND PROPOSED RESTORATION MEASURES OF EUPALINOS AQUEDUCT LININGS, SAMOS ISLAND, GREECE

13.10-14.15 LUNCH TIME

14.15-15.00 POSTER PRESENTATIONS

SESSION: GEOLOGICAL AND ARCHAEOLOGICAL RESEARCH IN COASTAL AND MARINE ENVIRONMENT

15.00-15.25 POULOS S.

Title: THE PHYSICO-GEOGRAPHICAL CHARACTERISTICS OF THE BEACHES OF MILOS ISLAND

15.25-15.50 HASIOTIS T., KAPSIMALIS V., ROUSAKIS, G., TSOUTSIA A.

Title: SURVEYING FOR MARINE AGGREGATES IN THE AEGEAN SEA

15.50-16.15 PAPATHEODOROU G. & GERAGA M

Title: REMOTE SENSING AND THE MANAGEMENT OF UNDERWATER CULTURAL HERITAGE SITES

16.15-16.40 KAPSIMALIS V.

Title: PALAEO-LITHIC LANDSCAPES OF THE CYCLADES SHELF, AEGEAN SEA, GREECE

DAY 3rd: 19/9

SESSION: GEOLOGICAL, ARCHAEOLOGICAL AND MINING HERITAGE

09.30-10.15: MOUNDREA-AGRAFIOTI .A.

Title: MELIAN OBSIDIAN QUARRIES AND OBSIDIAN PRODUCTION AND CIRCULATION NETWORKS IN THE PREHISTORIC AEGEAN.

10.15-10.40 MAGGANAS A.

Title: PALEOLITHIC CHERTS AND ARTIFACTS. CASE STUDIES FROM LESBOS AND MEGANISI-LEVKAS ISLANDS

10.40-11.05 STAMATAKIS M. & MALEGIANNAKI I.

Title: THE EXPLOITATION OF EMERY ON THE ISLAND OF SAMOS: EXISTENT DATA AND RESEARCH PERSPECTIVES

11.05-11.25 COFFEE BREAK

11.25-11.50 LIARD F.

Title: INVESTIGATIONS ON THE MICROSTRUCTURE AND MINERALOGY OF CERAMICS FROM MALIA, LASSITHI: RECONSTRUCTING POTTING TECHNOLOGY, EXCHANGE NETWORKS AND SOCIO-CULTURAL PRACTICES AMONG A LATE BRONZE AGE COMMUNITY FROM CRETE

11.50-12.15 JONES-PHOTOS E.

Title: THE 'EGKOILA' OF SE MELOS: A SHELTER FOR THE FARMING, THE MINING AND THE FUNERAL

12:15-12:40 KEANE C., JONES-PHOTOS E., HAL L A.J. & LEANORD A.

Title: MEDICINAL 'CLAYS' OF MELOS: FROM GEO-ARCHAEOLOGY TO MICROBIOLOGY

12.40-13.05 ANDROULAKIS T.

Title: MINING AND TOURISM

13.05-13.30 REGUEIRO M.

Title: THE ROLE OF INDUSTRIAL MINERALS IN THE DEVELOPMENT OF THE MEDITERRANEAN REGION

13.30 -14.20 LUNCH TIME

14.20-15.00 POSTER PRESENTATIONS

INDUSTRIAL MINERALS AND THE ENVIRONMENT

15.00-15.25 - CALVO J.P.

Title: THE CONTRIBUTION OF INDUSTRIAL MINERALS TO SOLVING ENVIRONMENTAL ISSUES

15.25-15.50 STEFANAKIS M.

Title: Quarrying and Environment

15.50-16.15 GEORGIOU E.

Title: QUARRYING OF INDUSTRIAL MINERALS & THE ENVIRONMENT

16.15-16.40 PETRAKIS G.

Title: Forestry Issues in Rehabilitation of Mining Sites

20.30 -22.30 OFFICIAL DINNER

DAY 4th 20/9 –THREE OPTIONS: TWO WORKSHOPS & A TECHNICAL VISIT

1ST WORKSHOP :

MOUNDREA - AGRAFIOTI: ANCIENT TOOLS [flint, chert and obsidian] - Milos Conference Center - George Eliopoulos

2ND WORKSHOP:

PAPATHEODOROU G., CHRISTODOULOU D., FAKIRIS E., IATROU M., HASIOTIS Th. & POULOS S.-: Remote sensing techniques in submarine research – Implemented in a coastal area of the island

TECHNICAL VISIT:

ARCHAEOLOGICAL MUSEUM, ARCHAEOLOGICAL SITES [ANCIENT THEATER, CATAKOMBS, ANCIENT WALLS, FYLAKOPI, KOUFI RECENT FINDINGS] -RESTORATION-BUILDING STONES-COASTAL GEOLOGY [NORTH COAST FROM SARA KINIKO TO POLLONIA], ACTIVE & OLD MINING SITES [KAOLIN AND BENTONITE EXPLOITATION] – REHABILITATION

Sunday 21/9/2014 [optional]

BOAT-TRIP AROUND MILOS - COASTAL GEOLOGY, OLD & ACTIVE MINING SITES, HISTORICAL BUILDINGS [VANI MINE, KLEFTIKO, FYRIPLAKA PERLITE MINE, SULPHUR MINES AND BUILDINGS, KOMIA MILLSTONES, KIMOLOS OLD LOADING BRIDGES, VOUDIA MINING CENTER, TRACHILAS PERLITE QUARRIES AND RESTORED AREAS, ARKOUDIA GEOMORPHS, KLIMA TRACES OF ANCIENT EARTHQUAKES]

Poster presentations [still open for submissions]:

1- Karditsa K., Petrakis S., Monioudi# I., Andreadis O.#

*UoA, Faculty of Geology & Geoenvironment

#University of the Aegean, Department of Marine Sciences

Title: COASTAL EROSION: CAUSES AND EXAMPLES FROM GREECE

2 - Anastasatou M.*

*PhD student at UoA, Dept of Geology & Geoenvironment

Title: PERLITE ORE-DEPOSITS OF SE EUROPE. MATERIALS CHARACTERIZATION AND ENVIRONMENTAL END USES

3- Tsoutsia A*., Karditsa A.*, Petrakis S.*, Anastasatou M.*, Kapsimalis V^., Rousakis G.^, Koukounari I*., Aspiotis K.*, Hasiotis Th.#, Velegrakis A.#, Papavlassopoulou N.*, Stamatakis M.*, Stamatakis G.*, Poulos S.*

* University of Athens

#University of the Aegean, Department of Marine Sciences

^ HCMR

TITLE: CONTRASTING MARINE AGGREGATES ENVIRONMENTS IN THE SOUTH AEGEAN SEA

3- Antonopoulou S.*

*PhD student at UoA, Dept of Geology & Geoenvironment

Title: COMPARISON OF GEO-POLYMERS AND CEMENT MORTARS AS CONCRETE REPAIRING MATERIALS

4- THEODORIDOU M.*, CHARALAMBOUS E.*, IOANNOU I.* & MARAVELAKI P.**

*Building Materials & Ledra Laboratories, Department of Civil and Environmental Engineering School of Engineering, University of Cyprus

**School of Architectural Engineering, Technical University of Crete

Title: THE USE OF NANO-ADDITIVES IN LIME-BASED COMPOSITES

5- Roumelioti P1, Zaggana E1, Photos-Jones E.2&3 and, Hall AJ3

1Laboratory of Hydrogeology, Department of Geology, University of Patras, 26500 Rion, Patras

2.Analytical Services for Art and Archaeology, Glasgow, UK

3. Archaeology, School of Humanities, University of Glasgow, UK

Title: THE HOLY EARTHS (AYIOCHOMATA) AND HOLY WATERS (AYIASMATA) OF LEMNOS: AN ARCHAEO- HYDRO-GEOLOGICAL PATH AROUND E. LEMNOS

6- Photos-Jones E.1,3, Keane C.2, Stamatakis M4, Robertson P.2, Hall A.J.3, Leanord A.2

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2. Microbiology Department, Southern General Hospital, Glasgow, UK

3. Archaeology, School of Humanities, University of Glasgow, UK

4. Geology Department, National and Kapodistrian University of Athens, Athens, Greece

Title: TESTING THE ANTIBACTERIAL PROPERTIES OF SAMIAN EARTH: ONGOING

RESEARCH

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**2015 BANEALCANE, BRITISH ASSOCIATION FOR
NEAR EASTERN ARCHAEOLOGY 2015
CONFERENCE, LONDON, 7-9 JANUARY 2015,
FIRST CIRCULAR**

The 2015 BANEALCANE conference will take in London 7-9 January 2015. The venue will be at the School of Oriental and African Studies and University College London. For details on the conference themes, sessions, and other information please go to <http://banealcane.org/banea/index.php/banea-2015-conference/>. The themes are:

- Highland and Lowland areas of the Near East and Egypt
- Adaptations, Transformations, and Continuity
- Period Transitions
- Archaeology and Conflict

Call for Contributions

Offers are invited for papers, posters and workshops. Please fill in the online [\(http://banealcane.org/banea/index.php/banea-2015-conference/\)](http://banealcane.org/banea/index.php/banea-2015-conference/) form for paper, poster, or workshop submissions. Sessions currently planned and their organizers are listed, but proposals for more sessions are welcome, and the submission of papers for the advertised sessions is explicitly encouraged.

Registration

Details of registration payment, meals and accommodation will be forwarded in the second circular.

Student Grants

Student members of BANEALCANE may apply to BANEALCANE for financial support towards travel, accommodation and the conference fee. Details and application forms will be available in the second circular and will be available on the BANEALCANE website <http://banealcane.org/banea/>

4TH SYMPOSIUM ARCH RNT,
ARCHAEOLOGICAL RESEARCH AND NEW
TECHNOLOGIES, KALAMATA (GREECE),
OCTOBER 1-3, 2014

**Organised by the Archaeometry Laboratory
University of Peloponnese**

The Symposium focuses on the use of *New Technologies* (*Archaeometry, Computing Technology, Conservation and Restoration*) in the *Archaeological Research*, notably with the presentation of interdisciplinary approaches, special case studies and research of archaeological materials and assemblages.

Special Topic: GEOARCHAEOLOGY
(I – Landscape and II – Micromorphology)

Your participation and contribution are most welcome!

Scientific Committee

K. Baika (Ministry of Culture), E. Banou (Peloponnese University), S. Boyatzis (Athens T.E.I.), Y. Facorellis (Athens T.E.I.), E. Ioakimoglou (Athens T.E.I.), I. Kakoulli (U.C.L.A.), I. Karapanagiotis (Ecclesiastical Academy of Thessaloniki), P. Karkanas (Ministry of Culture), Y. I. Liritzis (Aegean University), Y. Lolos (Thessaly University), Maniatis (N.C.S.R. Demokritos), P. Maravelaki (Crete University), E. Matzourani (Athens University), A. Moropoulou (N.T.U.A.), Th. Rehren (U.C.Q.), P. Themelis (S.M.A.S.), G. Tsokas (A.U.TH.), M. Xanthopoulou (Peloponnese University), J. Wright (A.S.C.S.A.)

Organizing Committee

M. Dendropoulou, P. Konstantinou, M. Kaparou, M. Kylafi, G. Malaperdas, E. Palamara, C. Valantou, N. Zacharias (Chair)

Preliminary Program

Wednesday, 1 October

18:00 - 20:00 Opening, Special Session

20:00 - 22:00 Welcome Reception

Thursday, 2 October

9:00 – 11:00 Session I

11:00 – 11:30 coffee

11:30 – 13:30 Session II

13:30 – 14:30 lunch

14:30 – 15:30 Poster Session I

15:30 – 17:00 Session III

17:00 – 17:30 coffee

17:30 – 19:00 Session IV

Friday, 3 October

9:00 – 11:00 Session V

11:00 – 11:30 coffee

11:30 – 13:30 Session VI

13:30 – 14:30 lunch

14:30 – 15:30 Poster Session II

15:30 – 17:00 Session VII

17:00 – 17:30 coffee

17:30 – 19:00 Session VIII

19:00 – 19:30 Closing

20:00 Symposium Dinner

Thursday, 2 October, 19:00-20:00 Archaeological Museum of Messinia Guided Tour

Saturday, 4 October, 11:00 – 13:00 Ancient Messene Guided Tour

Registration: 60 euros. Includes participant bag, coffee and lunch breaks, guided tours and proceedings publication accommodation (two nights)

Accommodation (optional): The organization offers 2 options.

A. 40 euro (per night with breakfast, taxes included, 4 stars rated).

B. 30 euro (per night with breakfast, taxes included, 2 stars rated).

Information: Abstracts must be submitted electronically by **August 20**, using the template given on the web page <http://kalamata.uop.gr/~Archaeolab>. All submissions will be reviewed by the members of the Scientific Committee. Presentations will be given either as oral or poster communications depending on the reviewers' decision based on quality and originality. All presentations will be eligible for publication in the Symposium's proceedings (**University of Peloponnese Press**) after having been peer-reviewed.

INTERNATIONAL SCIENTIFIC MEETING
“RADIOCARBON AND DIET: AQUATIC
FOOD RESOURCES AND RESERVOIR
EFFECTS”, KIEL (GERMANY),
SEPTEMBER 24-26, 2014

Information: <http://www.rre-conference.uni-kiel.de>

Publication: publication of meeting proceedings is planned as a special issue of the journal **Radiocarbon**

Meeting topics:

- *Case studies showing radiocarbon age offsets associated with reservoir effect.*
- *Reservoir effects in non-human materials (e.g. ceramic food crusts, animal remains, terrestrial shells, sediments, etc.).*
- *Review of existing chronologies and events potentially affected by reservoir effects.*
- *Building chronological models in the presence of radiocarbon reservoir effects.*
- *Optimal sampling strategies for radiocarbon dating in the presence of potential reservoir effects.*
- *Archaeological and historical evidence for aquatic diets in a variety of time periods and geographical locations.*
- *Paleodietary reconstruction methods and their usefulness in identifying and quantifying an aquatic diet, including stable isotope methods and other dietary proxies.*
- *Radiocarbon dating of multiple human tissues/components for the identification of human dietary reservoir effects.*
- *Tracing ^{14}C within food webs.*
- *Understanding ^{14}C fluxes in the hydrologic cycle.*
- *Temporal and spatial variability of aquatic radiocarbon reservoir effects in both marine and inland contexts.*
- *(Un)expected radiocarbon reservoir effects.*

Scientific committee:

Anders Fischer (Danish Agency for Culture & Danish National Museum, Denmark)
Bernd Kromer (Klaus-Tschira-Laboratory for Radiometric Dating Methods, Germany)
Christopher Bronk Ramsey (University of Oxford, UK)
Clive Bonsall (University of Edinburgh, UK)
Douglas J. Kennett (Pennsylvania State University, USA)
Elisabetta Boaretto (Weizmann Institute, Israel)
Eva Maria Wild (University of Vienna, Austria)
Gordon Cook (University of Glasgow, UK)
Harald Lübke (Centre for Baltic and Scandinavian Archaeology, Germany)
Jan Heinemeier (Aarhus University, Denmark)
Judith Sealy (University of Cape Town, South Africa)
Kerstin Lidén (Stockholm University, Sweden)
Malcolm Lillie (University of Hull, UK)
Mathieu Boudin (Royal Institute for Cultural Heritage, Belgium)

Markku Oinonen (University of Helsinki, Finland)
Mike Richards (Max Planck Institute Leipzig, Germany & University of British Columbia, Canada)
Minoru Yoneda (University of Tokyo, Japan)
Nancy Beavan (University of Otago, New Zealand)
Natalia Shishlina (State Historical Museum, Russia)
Oliver Craig (University of York, UK)
Petro Pesonen (National Board of Antiquities, Finland)
Philippa Ascough (University of Glasgow, UK)
Pieter Grootes (University of Kiel, Germany)
Richard Evershed (University of Bristol, UK)
Tamsin O'Connell (University of Cambridge, UK)
Timothy Jull (University of Arizona, USA)

THE AGE OF SENSING, 5TH
INTERNATIONAL CONFERENCE ON
REMOTE SENSING IN ARCHAEOLOGY,
OCTOBER 13-15, 2014, DUKE UNIVERSITY—
DURHAM, NORTH CAROLINA

<http://space2place.classicalstudies.duke.edu>

In the past, the International Conference on Remote Sensing in Archaeology has been hosted in China, India, and Italy. For the first time in its history, the conference will take place in the United States at Duke University in Durham, North Carolina. The conference theme will be “The Age of Sensing.”

Confirmed keynote speakers include: William Limp (University of Arkansas), Wolfgang Neubauer (University of Vienna), and Frank M.R. Vermeulen (Ghent University, Belgium)

This conference will explore the Age of Sensing, broadly defined. We are seeking abstracts and workshop proposals addressing any of the following topics:

- Large Scale Remote Sensing
- Close Range Sensing
- 3D Modeling
- Body sensing
- Immersive Sensing
- Aerial Photography
- GIS and Sensing
- Spatial Technologies and Landscape
- Virtual Landscapes
- Integrated Technologies
- Intra and inter-site Applications
- Lidar Applications
- Geophysics
- Sensing and Urban Context
- Cultural Resource Management
- Drones and UAV
- Close Range Sensing
- Remote Sensing
- Virtual Reality and Cyber-Archaeology
- Defining High Standards
- Commercial Archaeological Remote Sensing

For papers:

Please submit an abstract of 300-500 words (Times New Roman, 11pt font, standard margins) by **March 31, 2014**. See <http://space2place.classicalstudies.duke.edu> for the submission form.

For workshops:

Please submit a proposal by March 31, 2014 to space2place@duke.edu, including a title, number of participants (expected), technical requirements (equipment needed), and a description of the workshop.

FOURTH BALKAN SYMPOSIUM ON
ARCHAEOLOGY, 27TH – 30TH SEPTEMBER
2014, NESSEBAR, BULGARIA

Dear colleagues,

Registration and abstract submission for the **Fourth Balkan Symposium on Archaeometry**, 27th – 30th September 2014, Nessebar, Bulgaria is open.

Please note that the abstract submission ends on May 30, 2014.

Please send them to bsa4@issp.bas.bg

Detailed information of the 4th BSA is available at the website: <http://bsa4.issp.bas.bg/>

We are looking forward to welcoming you in Nessebar in September 2014.

Local Organizing Committee of 4th BSA

CAA 2014, UNIVERSITÉ PARIS 1 PANTHÉON-
SORBONNE, PARIS, FRANCE, 22TH-25TH
APRIL, 2014

You are warmly invited to take part in the CAA2014 Paris Conference, which will be held at the “Université Paris 1 Panthéon-Sorbonne” Paris, France, **from 22th to 25th April 2014**.

The CAA (Computer Applications and Quantitative Methods in Archaeology) is an international congress which has taken place every year for 41 years. The last conference took place in Australia. This conference usually brings together hundreds of participants and takes place according to the principle of parallel sessions and workshops or roundtables.

The Conference will be helped by the following partner institutions: Art history and Archaeology Departments university Paris 1 Panthéon-Sorbonne, Maison Archéologie Ethnologie Nanterre, UMR Archéologies et Sciences de l'Antiquité-Nanterre, UMR Trajectoires-Nanterre, Ecole des Hautes Etudes en Sciences Sociales (EHESS), LAMOP, Doctoral School of archaeology ED112 university Paris 1, INRAP, INSHS CNRS, Ministry of Culture, Ville de Paris, Région Île-de-France.

Acts will be published in the form of a volume containing the best papers.

Practical informations

The official language of the CAA is English, the papers and posters will thus have to be presented in this language.

If you need assistance, please send an e-mail to caa2014@sciencesconf.org

The University cannot unfortunately offer accommodations for your stay during the conference.

Please go to the page Informations > Accommodations for more informations and book early.

Some Paris students can offer free accommodations for the stay of international students (limited places). If you are interested, please send an e-mail to caa2014-Student@sciencesconf.org and giving your name, e-mail, date of arrival and duration of your stay. We will put you in relation according to the possibilities.

The conference venue is the main building of Panthéon-Sorbonne university - 12 place du Panthéon PARIS (5e) for the Sessions.

CAA Bursary Scheme

[Read more...](#)

CAA 2014 programm is now available

The themes of the conference are likely to include the following :

1. Field and laboratory data recording
2. Historiography
3. Ontologies and standards
4. Internet and archaeology
5. 3D Archaeology
6. AIS (Archaeological Information Systems)
7. GIS & spatial analysis
8. Mathematics and Statistics in Archaeology
9. Open source
10. Computing in Epigraphy and History
11. Multi-agent systems and complex system modelling
12. Virtual Archaeology

27 sessions, 15 roundtables and 12 workshops have been accepted

[Read more...](#)

TERRACOTTAS IN THE MEDITERRANEAN
THROUGH TIME, 23-25 MARCH 2015,
UNIVERSITY OF HAIFA, ISRAEL,
CALL FOR PAPERS

The Zinman Institute of Archaeology and the Department of Art History of the University of Haifa, Israel, invites the submission of papers for the conference "Terracottas in the Mediterranean Through Time", dedicated to the study of terracotta figurines and related objects in the Mediterranean region from the early periods to late antiquity. The conference will take place at the University of Haifa in Israel, 23-25 March 2015.

The conference is under the auspices of the Association for Coroplastic Studies (ACoST).

The conference aims to bring together scholars and students who often tackle the same issues as they study clay figurines and related objects from different periods and parts of the Mediterranean region.

Scholars who research terracottas of illiterate societies often use anthropological and ethnographical methods, while those studying terracottas of historical periods refer to historical sources and artistic analogies.

The various viewpoints and attitudes may enrich and deepen our understanding of terracotta figurines and their role in society.

The scope of issues to be discussed at the conference will be wide, and will follow the different stages of the terracottas' lives:

First stage - the artisans or coroplasts: aspects of manufacture; typology and iconography; production of large- and small-scale terracottas; social status of the artisans; organization of workshops; questions of specialization; relationships with other media and workshops; new technologies employed in the dating and identification of workshops.

Second stage - patterns of distribution: interaction between terracotta production and markets; local production versus imports; imitations; trading, selling and offering.

Third stage - the users: Who used terracottas and who did not; how they were used and in what circumstances; usage through space and time; other objects used together with terracottas; themes and types in specific contexts (sacred, funereal and domestic); choice of types; symbolic meaning conveyed by terracottas; the role of terracottas in society; terracottas and gender.

Fourth stage - phasing out: How, why and when terracottas went out of use; patterns of deposition or obliteration; archaeological context of terracottas and its meaning.

Fifth stage - ancient terracottas today: influence of ancient terracottas on 19th- and 20th-century art; robbery and the antiquities market; museum display of terracottas.

The official language of the conference is English. Presentations should not exceed 20 minutes.

Abstracts of 200-300 words should be submitted by 30 September 2014 to Dr. Adi Erlich, aerlich@research.haifa.ac.il in Word format including surname, first name, position, affiliation, phone number, email address and title of paper.

We invite proposals for panels and individual papers on these and related topics.

The scientific committee:

Dr. Adi Erlich

Dr. Sonia Klinger

Prof. Tallay Ornan

Consultant: Prof. Jaimee Uhlenbrock

**THE CIRCULATION OF ASTRONOMICAL
KNOWLEDGE IN THE ANCIENT WORLD, 12-
13 APRIL 2014, BROWN UNIVERSITY,
PEMBROKE HALL 305**

This conference will explore the ways in which astronomical knowledge in the ancient world circulated between different communities of scholars over time and space. This broad theme includes both the transmission of knowledge between one culture and another (eg from the Babylonians to the Greeks, or the Greeks to India), and between different groups in the same culture (eg later authors writing commentaries on earlier works, the communication of astronomical knowledge between different cities, the relationship between ‘elite’ and ‘popular’ astronomy, and the reinterpretation of earlier astronomical traditions by later astronomers). The circulation of astronomical knowledge provides an insight into both the way that astronomy was practiced, learnt and written down and the wider political and cultural connections between different societies.

Programme

Saturday 12 April

Morning Session

9:00am Welcome and Introduction

9:30am Francesca Rochberg (Berkeley / ISAW)

The Brown School of the History of Science: Historiography and the Astral Sciences

10:00am Joachim F. Quack (Heidelberg)

On the Contemporaneity of the Seemingly Incongruous, or Why Astral Lore Cannot be Studied in Isolation from the Rest of the Culture.

10:30am Andreas Winkler (Berkeley)

The Transmission of Knowledge in the Ancient Egyptian Astrological Manuals

11:00am Break

11:30am Daniel P. Morgan (Laboratoire SPHERE, CNRS - Université Paris Diderot)

Mercury and the Case for Plural Planetary Traditions in Early Imperial China

12:00pm Ethan Harkness (New York University)

The Popular Face of Astronomical and Calendrical Knowledge in Early China

12:30pm Guan Yuzhen (Brown University)

The Transmission of Knowledge Between Chinese Astronomers in the 2nd Century AD

Afternoon Session

2:30pm Niu Weixing (Shanghai Jiao Tong University / Brown University)

On the Dunhuang Manuscript P.4071: A Case Study of the Sinicization of Western Horoscope in late 10th Century China

3:00pm Song Shenmi (Shanghai Jiao Tong University)

The Twelve Signs of the Zodiac in the Tang and Song Dynasties: A Set of Signs Which Lost their Meanings Within Horoscopic Astrology

3:30pm Kristina Buhrman (Florida State University)

Classical Texts and Post-Hoc Adjustments: The Revival of the Rule Cycle (章) in 12-Century Japan

4:00pm Break

4:30pm Matthew Rutz (Brown University)

Astral Knowledge in an International Age: Transmission of the Cuneiform Tradition, ca. 1500-1000 BC

5:00pm John Steele (Brown University)

The Circulation of Astronomical Knowledge Between Babylon and Uruk

Sunday 13 April

Morning Session

9:00am Zackary Wainer (Brown University)

Tablet 4 of the Series DIŠ Sîn ina Tāmartišu and Traditions of Mesopotamian Interpretive Eclipse Schemes

9:30am M. Willis Monroe (Brown University)

The Micro-Zodiac in Babylon and Uruk: Seleucid Zodiacal Astrology

10:00am John Z. Wee (University of Chicago)

Late Babylonian and Greco-Roman Medical Astrology

10:30am Break

11:00am Toke Knudsen (SUNY Oneonta)

Omens and Omen Series in Mesopotamia and India: Issues of Transmission

11:30am Zoë Misiewicz (ISAW)

Assyrian Lunar Omens in Byzantium

12:00pm Clemency Montelle (University of Canterbury)

Hypsicles of Alexandria and his Little Book of Rising Times

Afternoon Session

2:00pm Alexander Jones (ISAW)

Interpolated Observations in Ancient Astronomy

2:30pm Kim Plofker (Union College)

What, if Anything, is Greek About Aryabhata's Mean Motions? An Examination of the Controversy

3:00pm Closing Remarks

The conference is free and open to all.

Please visit the site: <http://events.brown.edu/events/cal/CAL-00147cc4-44ba7899-0144-bc707e1c-00005fe2events%40brown.edu/>

ΣΕΜΙΝΑΡΙΟ ΤΟΥ ΤΟΜΕΑ ΕΛΛΗΝΙΚΗΣ ΚΑΙ
ΡΩΜΑΪΚΗΣ ΑΡΧΑΙΟΤΗΤΟΣ ΤΟΥ
ΙΝΣΤΙΤΟΥΤΟΥ ΙΣΤΟΡΙΚΩΝ ΕΡΕΥΝΩΝ
“ΑΙΓΕΣ, Η ΒΑΣΙΛΙΚΗ ΜΗΤΡΟΠΟΛΗ ΤΩΝ
ΜΑΚΕΔΟΝΩΝ ΝΕΑ ΕΥΡΗΜΑΤΑ” ΤΗΣ ΔΡΟΣ
ΑΓΓΕΛΙΚΗΣ ΚΟΤΤΑΡΙΔΗ

ΙΝΣΤΙΤΟΥΤΟ ΙΣΤΟΡΙΚΩΝ ΕΡΕΥΝΩΝ
ΕΘΝΙΚΟ ΙΔΡΥΜΑ ΕΡΕΥΝΩΝ
ΕΘΝΙΚΟ ΙΔΡΥΜΑ ΕΡΕΥΝΩΝ
ΛΕΩΦ. ΒΑΣ. ΚΩΝΣΤΑΝΤΙΝΟΥ 48, 11635 ΑΘΗΝΑ – ΤΗΛ.: 210.72.73.673 – FAX:
210.72.34.145 – EMAIL: kera@eie.gr

ΣΑΣ ΠΡΟΣΚΑΛΟΥΜΕ ΣΤΟ ΣΕΜΙΝΑΡΙΟ
του
Τομέα Ελληνικής και Ρωμαϊκής Αρχαιότητας του
Ινστιτούτου Ιστορικών Ερευνών
ΑΙΓΕΣ, Η ΒΑΣΙΛΙΚΗ ΜΗΤΡΟΠΟΛΗ ΤΩΝ ΜΑΚΕΔΟΝΩΝ
ΝΕΑ ΕΥΡΗΜΑΤΑ
της
Δρος Αγγελικής Κοτταρίδη
Προϊσταμένης της ΙΖ΄ Εφορείας Προϊστορικών και Κλασικών
Αρχαιοτήτων & Αναπληρώτριας Προϊσταμένης της ΙΑ΄ Εφορείας
Βυζαντινών Αρχαιοτήτων
ΤΕΤΑΡΤΗ, 2 ΑΠΡΙΛΙΟΥ
ΩΡΑ 15:00
ΕΘΝΙΚΟ ΙΔΡΥΜΑ ΕΡΕΥΝΩΝ
(Αίθουσα Σεμιναρίων Ισογείου)

ΘΕΣΕΙΣ ΕΡΓΑΣΙΑΣ/ΥΠΟΤΡΟΦΙΕΣ –
JOB VACANCIES/FELLOWSHIPS

POSTDOC IN METHOD DEVELOPMENT AND
AMS ANALYSIS OF IN SITU PRODUCED ^{14}C
AT DEPARTMENT OF PHYSICS AND
ASTRONOMY, AARHUS UNIVERSITY

Background

This two year post doc position will be part of a larger interdisciplinary group addressing the evolution of Earth's surface. Developing the links between climate, topography, and erosion processes represents one of the most intriguing challenges in Earth sciences today. This research involves empirical measurements of cosmogenic nuclides in rocks and sediments. Rocks within the uppermost few meters of the Earth's surface experience a constant bombardment of cosmic-ray particles, which produce cosmogenic nuclides (e.g. ^{10}Be , ^{14}C , ^{21}Ne , ^{26}Al , and ^{36}Cl) at known rates.

The measured nuclide concentrations therefore hold information on the history of surface exposure and rates of erosion. During the recent decades, advanced use of accelerator mass spectrometry (AMS) has made it possible to measure small concentrations of cosmogenic nuclides in rocks collected in the field. This recent development has revolutionized Earth surface science by expanding the quantitative aspects of the discipline. However, an important mainstay of the current use of cosmogenic nuclides involves the assumption of steady-state conditions – that is, where the removal of nuclides by erosion is equalled by their on-going in-situ production. However, a key effect of the strong climatic variations over the Quaternary is that steady-state conditions are not generally attained in the mountain ranges. Consequently, a new approach is required to fully utilise cosmogenic nuclides for constraining the influence of climate variability on erosion rates by measuring several cosmogenic nuclides with distinctly different decay rates (e.g. ^{10}Be , ^{14}C and ^{26}Al).

The focus of this post doc position will be to develop equipment and methods which will enable in situ produced ^{14}C of rocks and sediments to be measured at the AMS tandetron at Department of Physics and Astronomy, Aarhus University.

Job purpose

The post doc will be an active member of the AMS ^{14}C Dating Centre, Department of Physics and Astronomy. This involves assisting in the development of research proposals and planning research activities using the AMS capability. Particularly, the applicant is expected to assist in developing equipment for measuring in situ produced ^{14}C with the Aarhus AMS system. This will involve development of a pretreatment system to convert in situ produced ^{14}C into CO_2 for AMS analysis. Furthermore this will involve development of an inlet system for introducing CO_2 samples directly into the AMS ion source. The project will be carried out in close collaboration with international partners.

Further information

Further information can be found at:

<http://www.au.dk/en/about/job/nat/academicpositions/> or by contacting Jesper Olsen, jesper.olsen@phys.au.dk or David Egholm, david@geo.au.dk

JOB AVAILABLE IN MEXICO

We have a brand new AMS laboratory in Mexico.

My Institute has issued a call for candidates to occupy open staff research positions in many areas, one of them being: "Applied physics and interdisciplinary subjects, including: medical physics, biological physics and complex systems."

Would you please share this information among the attendants to the conference? The call for candidates is open, and the process is already started.

Thank you very much.

http://www.fisica.unam.mx/convocatorias/Conv-SIJA-Ing-final_mod.pdf

Regards,

Efraín Chávez

STAFF SCIENTIST POSITION AT AMS LAB **IN BERN**

Staff Scientist (Tenure Track)

Description

Accelerator mass spectrometry (AMS) allows the determination of the long-lived radioisotope ^{14}C (radiocarbon) in environmental and archeological samples. At the University of Bern, a new ^{14}C AMS laboratory was set up in 2013 based on a MIni Carbon DAting System (MICADAS).

Our focus includes the development of instrumental hyphenation to the gas ion source of the MICADAS, applications in atmospheric aerosol research and routine ^{14}C dating within the collaboration network of the Oeschger Centre for Climate Change Research of the University of Bern.

As the deputy head of the LARA, you are involved in all parts of this focus. You will be responsible for the MICADAS and the performance of the ^{14}C measurement. Furthermore, you will foster advanced direct coupling of commercial analytical instruments to the AMS, such as an elemental analyzer or an aerosol analyzer. Moreover, you will take part in the operational management of the laboratory and the cultivation of contacts with collaborators and customers.

Education

You have a PhD in chemistry, physics, or natural sciences with experience in radiocarbon analysis. We expect a team-oriented, motivated and good communication skilled candidate (post-doctoral/Senior researcher) interested in actively contributing to the research of the LARA and willing to prepare research proposals and to publish research results in peer reviewed international journals. You are an excellent scientist with creative ideas, fascinated to develop new analytical methods with strong technical skills. You are fluent in spoken and written English. A good knowledge of German and an expertise of LabView programming are ideal supplementary qualifications.

Entrance upon

September 2014 or by agreement

Conditions of appointment

Hiring level, from tenure-track postdoc to senior staff scientist, will be commensurate with experience. Based on the regulations of the University of Bern, the initial contract duration covers two years, followed by recurrent five-year contracts (permanent recurrence foreseen).

The position is third-party funded.

Remarks

Submit your application with CV per e-mail to szidat@dcb.unibe.ch before end of March 2014.

Contact address

PD Dr. Sönke Szidat
Laboratory for the Analysis of Radiocarbon with AMS (LARA)
Department of Chemistry and Biochemistry
University of Bern
Freiestrasse 3
CH-3012 Bern
<http://www.14c.unibe.ch>

BROWN UNIVERSITY, VISITING ASSISTANT
PROFESSOR IN ANCIENT ART,
ARCHITECTURE AND ARCHAEOLOGY

Providence, RI

The Department of History of Art and Architecture and the Joukowsky Institute for Archaeology and the Ancient World at Brown University invite applications for a visiting assistant professor position in any field of ancient art, architecture and archaeology. Teaching will be at both the undergraduate and graduate levels; interdisciplinary offerings are desirable.

QUALIFICATIONS

Candidates must be engaged with a promising and developing research program; the Ph.D. must be in hand by July 2014. Excellence in undergraduate and graduate teaching is essential. The successful candidate will also be expected to take a full part in the academic life and to contribute to the ongoing development of both units. This will be a one-year position, with the possibility of renewal for a second year, beginning on July 1, 2014.

APPLICATION INSTRUCTIONS

All candidates should submit a letter of application and a curriculum vitae by April 15, 2014. Applicants should arrange for three letters of reference to be submitted by the application deadline.

Applications received by April 15, 2014 will receive full consideration, but the search will remain open until the position is closed or filled.

for further information, contact: sheila_bonde@brown.edu or joukowsky_institute@brown.edu

Please visit the site: <http://apply.interfolio.com/24529>

[IAG GEOARCH:66] POSTDOC
ADVERTISEMENT: THE ARCHAEOLOGY OF
AGRICULTURAL RESILIENCE IN EASTERN
AFRICA, UNIVERSITY OF YORK

Dear Friends and Colleagues,

Could you please circulate the following advertisement for a post-doctoral position at the University of York, on behalf of Dr Daryl Stump.

Thanks,

Paul Lane
Uppsala University

Job Description

The AAREA Project (The Archaeology of Agricultural Resilience in Eastern Africa) is funded by a European Research Council ‘Starting Grant’, and is hosted by the Department of Archaeology at the University of York in partnership with the Geography Department at Durham University, with research collaborators across Europe and east Africa. The project seeks to employ a **Post Doctoral Research Associate** (or a researcher with the equivalent of doctoral levels of experience) with a specialism in ge archaeology to form a pivotal role within this research team. The post is for a fixed-term contract to the end of January 2018.

You will be expected to have a PhD or equivalent experience in archaeology or a relevant field, as well as a substantive track record in ge archaeology that includes a detailed working knowledge and expertise in the principles and practice of soil analyses for archaeological research, with an emphasis on soil micromorphology and/or geochemistry. Knowledge of tropical soils and/or knowledge of soils within historic agricultural systems are desirable, as is the ability to manage a research project, including supervision of the work of others and the ability to provide expert advice and guidance to teams. Given the location of the case-study sites, it is expected that you will have to spend up to 3 months a year in East Africa, as well as shorter periods of up to two weeks attending international conferences and workshops.

Informal enquiries can be made to Dr Daryl Stump, Tel: [+44 \(0\)1904 324979](tel:+441904324979) e-mail: daryl.stump@york.ac.uk

The vacancy is full-time and the hours of work are 37 per week. This post is immediately available and for the period up until 31 January 2018.

Department: Archaeology

Based at University of York - King's Manor, York city centre
Hours of work: Full-time
Contract status: Fixed term
Salary: £29,837 to £36,661 a year
Apply by: 04/04/2014
Open to any nationality.

Further information about the department is available at:
<http://www.york.ac.uk/archaeology/>

Further details, including full candidate brief are available here:
https://jobs.york.ac.uk/wd/plsql/wd_portal.show_job?p_web_site_id=3885&p_web_page_id=179669

IAG Working Group on Geoarchaeology
E-mail: geoarch.IAG@gmail.com
Web: <http://iag-geoarch.org/>
Twitter: https://twitter.com/IAG_geoarch



ΑΝΑΚΟΙΝΩΣΕΙΣ - ANNOUNCEMENTS



ΜΟΥΣΕΙΟ
ΠΑΛΑΙΟΝΤΟΛΟΓΙΑΣ
& ΓΕΩΛΟΓΙΑΣ ΠΑΝΕΠΙΣΤΗΜΙΟΥ
ΑΘΗΝΩΝ

ΤΜΗΜΑ ΓΕΩΛΟΓΙΑΣ & ΓΕΩΠΕΡΙΒΑΛΛΟΝΤΟΣ,
ΠΑΝΕΠΙΣΤΗΜΙΟΥΠΟΛΗ, ΖΩΓΡΑΦΟΥ

ΤΗΛ. PANTEBOY 210 727 4086,

e-mail: paleo-museum@geol.uoa.gr <http://paleo-museum.uoa.gr/paleontology/>

ΔΕΛΤΙΟ ΤΥΠΟΥ
ΑΡ. Πρ.

«ΞΑΝΑ ΜΑΖΙ» **ΣΤΟ ΜΟΥΣΕΙΟ ΠΑΛΑΙΟΝΤΟΛΟΓΙΑΣ &** **ΓΕΩΛΟΓΙΑΣ**

Η επιτυχία των εκδηλώσεων που πραγματοποίησε το Μουσείο Παλαιοντολογίας και Γεωλογίας τα Κυριακάτικα πρωινά, μας υποχρεώνει να ανταποκριθούμε στην καθημερινή ζήτηση για την επανάληψη των εκδηλώσεων όχι μόνον τις Κυριακές, αλλά και τις Καθημερινές και για πρώτη φορά την Καθαρά Δευτέρα

Οι εκδηλώσεις θα πραγματοποιηθούν και πάλι με τη θερμή υποστήριξη των μελών της Ομάδας Παλαιοντολογίας Σπονδυλωτών, που περιλαμβάνει υποψηφίους διδάκτορες, μεταπτυχιακούς και προπτυχιακούς φοιτητές μας.

Το Μουσείο Παλαιοντολογίας και Γεωλογίας μεταστεγάστηκε το 1981 στη μαγευτική καταπράσινη Πανεπιστημιούπολη στους πρόποδες του Υμηττού, μακριά από το άγχος της καθημερινότητας, μακριά από τα καυσαέρια της πόλης και διαθέτει επαρκές παρκινγκ (Βλέπε Χάρτη).

Καθώς η μέρα μεγαλώνει και η φύση ξυπνάει, ας εκμεταλλευτούμε «Ξανά μαζί» ένα πρωινό και ας σκύψουμε πάνω από τα απολιθώματα, ας τα γνωρίσουμε, ας κρατήσουμε λίγο στα χέρια μας απολιθώματα από ζώα που έζησαν στις θάλασσες και στις στεριές, αλλά και στα νησιά μας πολύ πριν εμφανιστεί ο άνθρωπος. Ας «αισθανθούμε» τον χρόνο που πέρασε καθώς θα κρατάμε στα χέρια μας ένα απολίθωμα δεκάδων χιλιάδων ή και εκατομμυρίων ετών και που φιλοξενείται στην πλουσιότερη συλλογή ελληνικών απολιθωμάτων, κάποιες από τις επιμέρους συλλογές της οποίας ανήκουν στις πλουσιότερες στον κόσμο.

Ελάτε με κέφι να γνωρίσετε αυτά που υπάρχουν κάτω από τα πόδια σας και δεν ξέρατε καν ότι υπήρχαν. Τα ιπάρια να καλπάζουν στις πεδιάδες από την Αττική μέχρι την Κρήτη και τη Βόρεια Ελλάδα, τους Μαχαιρόδοντες να παραμονεύουν τη λεία τους, αλλά και τα γιγαντιαία Δεινοθήρια που με το περπάτημα τους έκαναν τη γη να τρέμει, όπως πριν από πολλά εκατομμύρια χρόνια οι Δεινόσαυροι!

Γνωρίστε τους τελευταίους ευρωπαϊκούς νάνους ελέφαντες που ζούσαν στην Τήλο και που προσπαθούσαν να κρυφτούν στο σπήλαιο Χαρκαδιό κάθε φορά που το ηφαίστειο της Σαντορίνης κάπνιζε απειλητικά και τράνταζε την Αιγηίδα, αλλά και τους γίγαντες της Μεγαλόπολης, που ήταν γνωστοί ήδη από την αρχαιότητα.

Γνωρίστε τους νησιωτικούς ιπποπόταμους που τσαλαβουτούσαν στις λιμνούλες της Κρήτης, αλλά και τους μικρότερους στον κόσμο νησιωτικούς ιπποπόταμους που έζησαν στην Κύπρο. Τέλος γνωρίστε τους φοβερούς πάνθηρες, αλλά και τους λύγκες που αναζητούσαν την λεία τους στις πλαγιές του Υμηττού και σε όλη την Λαυρεωτική μόλις 10.000 πριν από το σήμερα.

ΔΡΑΣΤΗΡΙΟΤΗΤΕΣ

Το ταξίδι μας στο μακρινό παρελθόν περιλαμβάνει επιστημονικές ενημερώσεις για τα ζώα εκείνων των εποχών αλλά και μια μαγευτική αξέχαστη ανασκαφική εμπειρία για τους μικρούς παλαιοντολόγους και όχι μόνον....

Τα εκπαιδευτικά προγράμματα για το 2014, όπως και πέρυσι, θα είναι:

- «Ο μικρός Ανασκαφέας»
- «Συντηρώντας έναν θησαυρό»
- «Αντιγράφω ένα απολίθωμα»

Θα πραγματοποιούνται παράλληλα, έτσι ώστε να μπορέσει το Μουσείο να ανταποκριθεί στη μεγάλη ζήτηση.

Το Μουσείο Παλαιοντολογίας και Γεωλογίας του Πανεπιστημίου Αθηνών στην Πανεπιστημιούπολη Ζωγράφου,

Θα είναι ανοικτό τις καθημερινές με εκπαιδευτικά προγράμματα από την 1^η Μαρτίου έως και την 15^η Απριλίου, 9.00-14.00

- Κυριακές 10.00 -13.00
- Καθαρά Δευτέρα, 3 Μαρτίου 10.00 -13.00
- Μεγάλη Δευτέρα, 14 Απριλίου 10.00 -13.00
- Μεγάλη Τρίτη, 15 Απριλίου 10.00 -13.00

* Κλειστά κάθε Σάββατο και την 25^η Μαρτίου (Ημέρα Τρίτη).

Η καθημερινή λειτουργία του Μουσείου από 1^η Μαρτίου έως και 15^η Απριλίου από τις 9.00 έως τις 14.00 περιλαμβάνει

Ποιοτικές επιστημονικές ενημερώσεις από συνεργάτες μας με πολυετές ερευνητικό έργο.

3 εκπαιδευτικά προγράμματα, αποκλειστικά για τάξεις σχολείων τα οποία προσαρμόζονται από τους εκπαιδευτές μας στην ηλικία των παιδιών κάθε τάξης.

Τις Κυριακές αλλά και τη Μεγάλη Δευτέρα και Μεγάλη Τρίτη τα εκπαιδευτικά προγράμματα προορίζονται καταρχήν για τους ανεξάρτητους μικρούς επισκέπτες, αλλά και για ομάδες π.χ. προσκόπων, σωματείων, αθλητικών ενώσεων κλπ., πάντοτε όμως κατόπιν ραντεβού.

Για ομάδες άνω των 25 ατόμων θα είναι δυνατή κατόπιν ραντεβού η ξενάγηση στα Γαλλικά ή Αγγλικά και πιλοτικά στα Ρώσικα (όχι όλες τις ημέρες).

ΕΚΠΑΙΔΕΥΤΙΚΑ ΠΡΟΓΡΑΜΜΑΤΑ

Α' ΠΑΙΔΙΚΟ (6 – 15 ετών): Ο μικρός ανασκαφέας

Οι μικροί επισκέπτες θα έχουν τη δυνατότητα να πραγματοποιήσουν σε ειδικά διαμορφωμένο χώρο του Μουσείου τη δική τους «παλαιοντολογική ανασκαφή», με την υποστήριξη εξειδικευμένου και έμπειρου προσωπικού που το ίδιο πραγματοποιεί παλαιοντολογικές ανασκαφές σε διάφορες θέσεις στην Ελλάδα και στο εξωτερικό.

Β' ΠΑΙΔΙΚΟ (6 – 15 ετών): Συντηρώντας έναν θησαυρό – Επίδειξη μεθόδων συντήρησης απολιθωμάτων ασπόνδυλων και σπονδυλόζων

Οι μικροί επισκέπτες γνωρίζουν από κοντά τις κυριότερες μεθόδους συντήρησης και βλέπουν πώς ξεπροβάλλει σιγά-σιγά ένα απολίθωμα μέσα από το ίζημα.

Γ' ΠΑΙΔΙΚΟ (6 - 15 ετών): *Αντιγράφω ένα απολίθωμα*

Οι μικροί επισκέπτες γνωρίζουν τις μεθόδους κατασκευής αντιγράφων, κατασκευάζουν μόνοι τους απλά αντίγραφα απολιθωμάτων τα οποία και παίρνουν μαζί τους κατά την αποχώρηση από το Μουσείο. Παράλληλα ενημερώνονται για τις νέες τεχνολογίες αιχμής στην κατασκευή αντιγράφων.

ΕΙΣΟΔΟΣ ΕΠΙΣΚΕΠΤΩΝ

ΓΕΝΙΚΗ ΕΙΣΟΔΟΣ 2€

Περιλαμβάνει ξενάγηση στο Μουσείο, αλλά και το εκπαιδευτικό πρόγραμμα «*Ο μικρός Ανασκαφέας*»

ΠΡΟΣΘΕΤΑ ΕΚΠΑΙΔΕΥΤΙΚΑ

Οι επισκέπτες που επιθυμούν να συμμετάσχουν και στα υπόλοιπα δύο εκπαιδευτικά προγράμματα πληρώνουν ένα επιπλέον εισιτήριο (και για τα δύο), των 2€. Το ίδιο ισχύει και για τις σχολικές τάξεις ή άλλες ομάδες.

Οι εκδηλώσεις και δραστηριότητες μας ανακοινώνονται στην Ιστοσελίδα του Μουσείου

<http://paleo-museum.uoa.gr/paleontology/>

Για τη συμμετοχή στα εκπαιδευτικά προγράμματα είναι απαραίτητη δήλωση συμμετοχής στο τηλέφωνο 210 7274086 (Δευτέρα - Παρασκευή: 10.00 - 13.00).

Όσοι δηλώσουν συμμετοχή στα εκπαιδευτικά προγράμματα πρέπει να βρίσκονται στο Μουσείο τουλάχιστον 15 λεπτά πριν την έναρξη του εκπαιδευτικού προγράμματος.

ΠΡΟΣΒΑΣΗ

Με ΙΧ: Είσοδος αυτοκινήτων από την κεντρική πύλη της Πανεπιστημιούπολης επί της οδού Ούλωφ Πάλμε. Δωρεάν χώρος στάθμευσης, έξω από την είσοδο του Μουσείου.

Με ΜΜΜ: Απολαύστε 8 -10 λεπτά περπάτημα από το τέρμα Ζωγράφου (γραμμή λεωφορείου 608, Γαλάτσι-Ακαδημία-Νεκρ. Ζωγράφου και γραμμή λεωφορείου 230, Ακρόπολη-Ζωγράφου) και από το τέρμα Καισαριανής (γραμμή λεωφορείου 224, Καισαριανή-Ελ. Βενιζέλου).

Μόνο τις καθημερινές υπάρχει και η γραμμή λεωφορείου 250 (Πανεπιστημιούπολη-Στ. Ευαγγελισμού (Κυκλική), στάση «Γεωλογία», μόλις μερικά μέτρα από την είσοδο του Μουσείου).

ΧΟΡΗΓΟΙ



Τις εκδηλώσεις μας στο Μουσείο Παλαιοντολογίας και Γεωλογίας συνεχίζει να στηρίζει από το 2013, αφιλοκερδώς σαν χορηγός επικοινωνίας, ο ραδιοφωνικός σταθμός GALAXY FM 92

ΤΟ ΜΟΥΣΕΙΟ ΠΑΛΑΙΟΝΤΟΛΟΓΙΑΣ ΚΑΙ ΓΕΩΛΟΓΙΑΣ ΤΟΥ ΕΚΠΑ ΔΕΝ ΔΙΑΘΕΤΕΙ ΠΟΡΟΥΣ ΓΙΑ ΔΙΑΦΗΜΙΣΗ.

ΔΙΑΘΕΤΕΙ ΜΟΝΟΝ ΑΦΑΝΤΑΣΤΟ ΠΑΛΑΙΟΝΤΟΛΟΓΙΚΟ ΠΛΟΥΤΟ ΠΟΥ ΘΕΛΕΙ ΝΑ ΓΝΩΡΙΣΟΥΝ ΟΙ ΈΛΛΗΝΕΣ ΠΟΛΙΤΕΣ ΣΤΟΥΣ ΟΠΟΙΟΥΣ ΚΑΙ ΑΝΗΚΕΙ ΠΑΡΑΚΑΛΟΥΜΕ ΓΙΑ ΤΗΝ ΠΡΟΩΘΗΣΗ ΤΟΥ ΔΕΛΤΙΟΥ ΤΥΠΟΥ.

PREHISTORIC METALLURGY
(EXPERIMENTAL ARCHAEOLOGICAL METALLURGY)
COURSE - TUESDAY 27TH MAY - FRIDAY
30TH MAY 2014, HAMPSHIRE

COST **£350** (4 days teaching)

This is a practical and theoretical short course on the use of experimental archaeology in examining the production of metals at the beginning of the Bronze Age. Through lectures on prehistoric archaeometallurgy and daily practical workshops, the course will provide valuable experience for anyone working in this field or interested in it (either at undergraduate or postgraduate level).

During the practical sessions students will work in small groups to build, operate and record smelting hearths and the use these to produce metals (principally copper and tin). In addition, these groups will make much of the ancillary equipment such as the bellows, tuyeres, crucibles and moulds used in the production of metals from ores. Students will finish with the casting of small objects such as bronze or copper axes.

New for the 2014 course will be a session on Roman blacksmithing by Dr David Sim and a group iron smelting activity.

The course will be held at the world-famous Butser Ancient Farm in Hampshire and the tutors will be Dr Simon Timberlake of the Cambridge Archaeological Unit (University of Cambridge) and Fergus Milton of Butser Ancient Farm.

10-12 places available

(Food and accommodation costs not included - although reasonably priced Bed & Breakfast or hostel-type accommodation exists in Buriton and Petersfield within 3 miles of Butser Ancient Farm)

Contact: Fergus Milton fergus@fingerbuster.com

Simon Timberlake simon.timberlake@gmail.com for further information and booking forms

Ancient Bronze Casting - Saturday 31st May - Sunday 1st June 2014 COST **£90**

A week-end of exploring primitive bronze casting. Create moulds with clay, stone, or the lost-wax method and melt bronze in simple charcoal-fuelled furnaces blown by bag bellows.

Full details available on www.fingerbuster.com

Contact: Fergus Milton fergus@fingerbuster.com for further information and booking forms

There are a limited number of places available for the experimental archaeometallurgy and bronze casting courses.

Priority for places will go to those booking on both courses.

Dr Peter Cloughton,

Blaenpant Morfil, nr. Rosebush, Clynderwen, Pembrokeshire, Wales SA66 7RE.

Tel. +44 (0)1437 532578; Fax. +44 (0)1437 532921; Mobile +44 (0)7831 427599

Hon. University Fellow - College of Humanities, University of Exeter

<http://people.exeter.ac.uk/pfclaugh/about.htm>

E-mail: P.F.Cloughton@exeter.ac.uk

Co-owner - mining-history e-mail discussion list.

See <http://www.jiscmail.ac.uk/files/mining-history/> for details.

Mining History Pages - <http://www.people.exeter.ac.uk/pfclaugh/mhinf/>



1ST ARCHAEOLOGICAL SCIENCES SUMMER SCHOOL 2014, POLLENTIA (MALLORCA)

1st Archaeological Summer School at Pollentia, Alcúdia-Mallorca (Balearic Islands, Spain)

The purpose of the course is to expose students to interdisciplinary research that involves archaeology and the natural sciences in the field. The students will experience interactive work that combines excavation and analysis of materials using an on-site laboratory. The course will emphasize the inter-connection between laboratory analyses and the archaeological context, and will include fieldwork, laboratory work, and lectures.

Fieldwork

A special excavation of a room of the Forum will be devoted to the on-site archaeological sciences excavation for the entire week in the morning. Collection and processing of samples will be part of the duties.

Laboratory

In the afternoon, in addition to the talks, laboratory work will deal with the samples collected, preparing the analysis and practicing in the interpretation of the results.

Fees

The price of the course is 800 €. There is also the possibility of participating at the Pollentia excavation during the month of July with a reduction of the total price.

More Information

For more information access to ArcheoScience website where you could find more details about Special Talks, TimeTable, Excavation at Pollentia and more...

<http://www.archeoscience.com/summerschool/> or join the conversation at ArcheoScience Community Group

<http://comunidad.archeoscience.com/group/summerschool>

COURSE ON PREHISTORIC BRONZE
CASTING / ANCIENT
ARCHAOMETALLURGY AT THE
HEUNEBURG OPEN AIR MUSEUM, APRIL
26/27 2014, GERMANY

Experiential archaeology and the dissemination of archaeometallurgical knowledge.

In April 26/27 2014 a two day casting/ancient archaeometallurgy course will be held at the Heuneburg, a world famous celtic hill-top fortification in south-western Germany. The open air museum was built on the original location overlooking the danube.

Cost 250 Euros per Person, including an over night stay at the open air museum (if you so wish). Max no of participants: 10.

Full information can be found here: <http://archaeometallurgie.de/kurs-zum-praehistorischen-bronzeguss/>

The course includes the manufacture of a bronze objects, cast in the lost wax method. Therefore we are making build our own furnace, prepare the moulding loam, make wax models, make loam moulds, cure them, fire them and cast them.

During the weekend we are exploring the subject of archaeometallurgy from different perspectives: archaeology, craftsmanship and material science, which makes this an ideal course for any student of archaeometallurgy who is not afraid to get his hands dirty...

Social programme (optional, no extra cost):

We stay over night in the museum and will be preparing our own food in bronze cauldrons (medieval ones). Of course there also other possibilities for accommodation and food in the area.

The course is held in German, but the course coordinator is able to communicate in English as well.

Dr. Bastian Asmus
Labor für Archäometallurgie
Beroldingerweg 1
79194 Gundelfingen
<http://en.archaeometallurgie.de>

1ST ARCHAEOLOGICAL SCIENCES SUMMER SCHOOL AT POLLENTIA, ALCÚDIA-MALLORCA (BALEARIC ISLANDS, SPAIN), 21-25 OF JULY 2014

Archaeological Sciences program

The purpose of the course is to expose students to interdisciplinary research that involves archaeology and the natural sciences in the field. The students will experience interactive work that combines excavation and analysis of materials using an on-site laboratory. The course will emphasize the interconnection between laboratory analyses and the archaeological context, and will include fieldwork, laboratory work, and lectures.

Summer School directors: M.A. Cau, ICREA/director of ERAAUB/UB and R.M^a. Albert, ICREA/ERAAUB

Field Archaeology: M^a. E. Chávez, site co-director.

Archaeological Sciences: D. Cabanes, A. Pecci

Archaeologists: C. Mas, S. Munar, B. Vallori,

Timetable:

From Monday to Friday.

7.30-13 h., Excavation

13-15 h., Lunch

15-17.30 h., Laboratory

17.30-18.30 h., Talks

21 h., Dinner

Further information

M.A. Cau, macau@ub.edu,

ERAAUB, www.eraaub.com,

R.M^a. Albert, rmalbert@ub.edu

The Roman and Late Antique city of Pollentia (Alcúdia, Mallorca, Balearic Islands) The Roman city of Pollentia was founded in 123 by C. Caecilius Metellus with the conquest of the Balearics for Roman. Archaeological investigations started in the 1920's have uncovered a theatre, several residential quarters, necropolis and the Forum where current excavations are being carried out.

The archaeological excavations are actually run by the University of Barcelona and the University of La Laguna, under the auspice of the Consortium of the Roman city of Pollentia The ancient ruins are attached to modern Alcúdia in the northern part of Mallorca. It is a medieval village surrounded with walls and a nice atmosphere with all services, bars and restaurants available. Beautiful beaches are at a walking distance and the village is an excellent place to explore other parts of the island.

PRACTICAL INFORMATION

Dates: 21-25 of July 2014. Participants are advised to arrive the 20th and leave the 26th.

Positions: 10 vacancies only, over 18 years old. Selection will be made on academic merits.

Profile of the students: Archaeology, Classics, Anthropology students or any other person interested in experiencing the real work of Archaeology and Archaeological Sciences. The course includes an official certificate.

Inscription: You can pre-register to the course at:
<http://www.archeoscience.com/summerschool/>

Fees: 800 € Archaeological Sciences Summer School

The students of the Archaeological Sciences Summer School are welcome to join the International Summer School on Roman Archaeology starting the 7th of July ending the 3rd of August which has a cost of 2400 €. For those interested in participating in both courses, there will be a 400 € discount with a final amount of 2800 €.

Accommodation: Accommodation is included in the fees.

Food: Breakfast, half-morning sandwich, lunch and dinner will be also covered.

Air fares are NOT included

ARCHAEOLOGICAL SCIENCES WORKSHOP
(3rd week of July)

SPECIAL TALKS

1. Pollentia: a provincial city in the Balearics
M. A. CAU, Research Professor, Institutió Catalana de Recerca i Estudis Avançats, ICREA/Universitat de Barcelona/ERAAUB
2. Archaeological Science and Archaeological sites
D. CABANES, Universitat de Barcelona ERAAUB
3. Analysis of organic residues in Archaeology
A. PECCI, Università degli Studi di Calabria, ERAAUB
4. Phytolith Analysis and its potential
R.M^a. ALBERT, Research Professor, Institutió Catalana de Recerca i Estudis Avançats, ICREA/Universitat de Barcelona, ERAAUB
5. Geomorphology applied to archaeological sites and its landscape
Christophe Morhange, Université d'Aix-Marseille , IUF, CEREGE

FIELDWORK

A special excavation of a room of the Forum will be devoted to the on-site archaeological sciences excavation for the entire week in the morning. Collection and processing of samples will be part of the duties.

LABORATORY

In the afternoon, in addition to the talks, laboratory work will deal with the samples collected, preparing the analysis and practicing in the interpretation of the results.

PROGRAMMED VISITS

1. Guided visit to the site of Pollentia, M. A. Cau, site codirector.
-

SUMMERSCHOOL FINDS PROCESSING IN **ARCHAEOLOGICAL FIELDWORK IN** **GREECE**

Dear all,

Processing finds is a feature of every excavation and field survey and is essential to the analysis of fieldwork results. However, this crucial part of archaeological fieldwork gets only limited attention in academic curricula and there is little formal training.

In the summer of 2014, the Netherlands Institute at Athens and the University of Amsterdam are organizing a training course in finds processing in Greece, covering the process from finds administration to curation, conservation and restoration.

Dates of the course are 30 June-13 July 2014. There is the possibility for 15-20 participants. For more information, see:

<http://www.uva.nl/onderwijs/overig-onderwijs/zomer-winterprogramma-s/item/find-processing-in-archaeological-fieldwork.html>

Feel free to post this course elsewhere.

Best regards,

Gert Jan van Wijngaarden

University of Amsterdam, Department of Archaeology & Prehistory

Turfdraagsterpad 9

1012 XT Amsterdam

The Netherlands

+31 20 525 2565

www.uva.nl/profiel/G.J.M.vanWijngaarden

www.uva.nl/archaeology-zakynthos

INTERNET SITES

THE PHARAOH WHO FOUND THE SPHINX

King Thutmose IV didn't build the Great Sphinx. He rediscovered it, hidden in the sand, and - according to legend - it made him king in return (4:20)

Please visit the site: http://www.smithsonianmag.com/videos/category/3play_1/the-pharaoh-who-found-the-sphinx/?no-ist [Go there for video]

SHAMO SEMINAR ON TEXTILES

You will find at the following web address:

<http://www.mae.u-paris10.fr/seminaire-shamo-2014-les-textiles-dans-lorient-ancien/> the video made during the lecture in English by Eva Andersson Strand (Centre for Textile Research, Copenhagen) on January 23, 2014, which incorporated two experimental sessions (starting at 22'28 and 58'56).

The final session of the SHAMO seminar on ancient textiles will take place next May 15, 2014 with two lectures:

Corinne Debaine-Francfort (CNRS, Nanterre) : Textiles du Xinjiang (Chine), 3e millénaire av. J.-C. - 3e siècle ap. J.-C. Dominique Cardon (CNRS, Lyon) : Civilisations du fil rouge

**GOURNIA – AN URBAN CENTRE OF THE
LATE BRONZE AGE, KATHRIN MÜLLER**

Dear all,

I would like to announce the publication of a new book on the Minoan town of Gournia in the Late Bronze Age:

Kathrin Müller, Gournia – ein urbanes Zentrum der Spätbronzezeit, Berlin: Logos Verlag 2013. 190 pp. ISBN 978-3-8325-3357-1

It can be ordered online through Logos Verlag Berlin as an e-book or in printed form: <http://www.logos-verlag.de/cgi-bin/buch/isbn/3357>

Kathrin Müller M. A.
Doctoral Student at the Winckelmann-Institute of Classical Archaeology,
Humboldt University Berlin

Abstract

Gournia – An Urban Centre of the Late Bronze Age

This book deals with the various aspects of the town of Gournia, focusing on the factors which made this settlement a so-called urban centre of the Late Bronze Age, particularly in the Minoan Neopalatial Period.

For this purpose, this work first tackles some general aspects, such as the geographical location of the settlement and the history of research at Gournia. Subsequently, the first part of the study opts to define the term ‘town’ and to describe the site itself. After the layout, settlement history, approximate extent and number of inhabitants were examined, a study of the individual elements of the town such as potential fortifications, dwelling houses and special buildings including harbour facilities, the ensemble of ‘palace’ and ‘public court’ as well as the ‘town shrine’ follows. Particular attention is also paid to the identification of possible functional areas inside the town in order to investigate the ‘urbanity’ of the settlement.

The second part of the study compares the town of Gournia to other Minoan Late Bronze Age towns and palatial structures with the purpose of determining its position within the group of Late Bronze Age settlements on the whole. The central role of Gournia within its region is illustrated by discussing a possible area of influence. Finally, this study presents potential previous and successive settlements in the area of Gournia in order to reveal the diachronic change within this region.

In diesem Buch werden die verschiedenen Facetten der minoischen Stadtanlage von Gournia auf Kreta vorgestellt. Der Fokus liegt auf der Frage nach der Bedeutung der Siedlung: Hat es sich bei der spätbronzezeitlichen Siedlung um eine Stadt und somit um ein urbanes Zentrum gehandelt?

Um diese Frage zu beantworten, werden nach einer allgemeinen Beschäftigung mit der Definition des Begriffs ‚Stadt‘ die verschiedenen Elemente der Stadtanlage von Gournia analysiert: Sowohl deren Anlage, Besiedlungsgeschichte, Ausdehnung und Einwohnerzahl als auch einzelne Bestandteile der Siedlung wie mögliche Befestigungen, Wohnhäuser und besondere Bauten, darunter die Hafenanlage, das Ensemble von ‚Palast‘ und ‚öffentlichem Hof‘ sowie das ‚Stadtheiligtum‘, werden betrachtet. Darüber hinaus wird die Stadtanlage von Gournia mit vier weiteren spätbronzezeitlichen Städten verglichen. Anhand eines Überblicks über das mögliche Einflussgebiet Gournias wird außerdem die Zentrumsfunktion der Siedlung innerhalb ihrer Region erläutert. Es werden auch potentielle Vorläufer- und Nachfolgesiedlungen im Umkreis von Gournia vorgestellt, um den zeitübergreifenden Wandel im gesamten Gebiet fassbar zu machen.

Das Buch richtet sich an Leser und wissenschaftliche Fachkollegen, die ein Interesse an der minoischen Kultur und deren Stadtarchitektur haben oder sich speziell mit bronzezeitlichen ägäischen Siedlungen und den Elementen einer Stadt beschäftigen. Ein englisches Abstract und ein französisches Sommaire geben einen kurzen Überblick über den Inhalt des Buches. Zahlreiche Abbildungen und ein A3-Faltplan, der den Plan der Stadt zeigt, dienen einer guten Orientierung für den Leser.

THE ANCIENT SAILING SEASON.
MNEMOSYNE SUPPLEMENTS. HISTORY
AND ARCHAEOLOGY OF CLASSICAL
ANTIQUITY, 351, JAMES BERESFORD

Bryn Mawr Classical Review 2014.03.03

James Beresford, *The Ancient Sailing Season. Mnemosyne supplements. History and archaeology of classical antiquity, 351.* Leiden; Boston: Brill, 2013. Pp. xv, 364. ISBN 9789004223523. \$182.00.

Reviewed by Emmanuel Nantet, Université du Maine, France
(Emmanuel.Nantet@univ-lemans.fr)

The author aims to underline the fact that ancient seafaring was not strictly limited to the period from April through November, but could also occur during winter. Indeed, for a long time, some scholars, especially Lionel Casson and Jean Rougé, asserted that there was a 'good season', quite propitious for seafaring, and a 'bad season', when sea shipping was not possible, or at least considerably reduced.

However, recent works, such as those by Jamie Morton or Pascal Arnaud,¹ have deeply changed our view on navigation in winter. Beresford follows the same path of reconsidering the capacities of ancient ships, which have been disregarded for too long compared to the boats of the Modern Age.

Beresford starts by examining the main literary sources that deal with a limitation of seafaring in winter (chap. I). He then turns to the natural conditions in winter (especially winds, but also currents, visibility, darkness, etc), using the Pilot Charts, in order to understand their effects on the navigation (chap. II). To determine if the ancient ships were able to sail in winter, he considers their architecture, paying particular attention to the data from experimental archaeological projects, such as the reconstructions of the *Kyrenia 2* and *Olympias* (chap. III). Thereafter, he turns to navigation practices, for instance open water seafaring or the use of the sounding leads (chap. IV); to winter navigation in the Indian Ocean (chap. V); and finally to the specific sailing seasons of pirates and fishermen (chap. VI).

The demonstration is clear and very readable. There are some interesting ideas. For instance, Beresford insists strongly on the evolution of seafaring over time. Natural conditions and ships are never described as frozen in time.

However, there is a significant lack of bibliography, especially on ship construction (chap. III).² Most of the references quoted are in English. Very few mention French authors, and almost none in any other language. Not a single paper from *Archaeonautica* is quoted, notably Patrice Pomey and André Tchernia on the tonnages of ancient ships ('Le tonnage maximum des navires de commerce romains', *Archaeonautica*, 2 [1978]). None of Pascal Arnaud's works is even mentioned.

Moreover the bibliography is completely outdated: advanced research in ship archaeology cannot rely solely on Steffy's and McGrail's books,³ no matter how excellent they are. Most of the references are from the last century, with hardly ten from 2005 to 2010 (the most recent year). Some very interesting synthetic reports (Yaacov Kahanov, Patrice Pomey, etc) on Mediterranean ship construction are not cited.⁴ The main article about archaic sewn plank boats is not mentioned either.⁵

Thus, because of this bibliographical gap, the work gives only a brief - and quite outdated - insight into the subject. Last but not least, the book costs 131 euros (182 dollars). Such a price is not the choice of the author, but it is unfortunate, nonetheless.

Notes:

1. Jamie Morton, *The Role of the Physical Environment in Ancient Greek Seafaring*, Brill, 2001; Pascal Arnaud, *Les routes de la navigation antique: itinéraires en Méditerranée*, Paris: Errance, 2005.
2. I am grateful to Emilien Afane for his advice concerning chap. II.
3. J. Richard Steffy, *Wooden Ship Building and the Interpretation of Shipwrecks*, College Station: Texas A and M University, 1994; Sean McGrail, *Boats of the world : from the Stone Age to medieval times*, Oxford: Oxford University Press, 2004.
4. Essays by both are found in Hocker Frederick M., Ward Cheryl A. [eds.], *The Philosophy of Shipbuilding* College Station: Texas A and M University, 2004).
5. Kahanov Yaacov, Pomey Patrice, 'The Greek Sewn Shipbuilding Tradition and Ma'agan Mikhael ship: A comparison with Mediterranean parallels from the sixth to the fourth centuries BC', *The Mariner's Mirror* 90 (2004), p. 6-28.

Please visit the site: <http://bmcr.brynmawr.edu/2014/2014-03-03.html>

ARCHAEOLOGIA BULGARICA XVIII 2014/1

Issue XVIII, 2014/1 has been published.

Regards,

Lyudmil Vagalinski, editor

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On the cover: fibula from a female grave in Enisala, SE Romania, early 7th c.; see the paper of Ailincăi et al. in this issue; photo by Gabriel Dincu.

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Pour des renseignements supplémentaires:

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EΙΛΗΣΕΙΣ - NEWS RELEASE

ROMAN 'GLADIATOR SCHOOL' RECREATED VIRTUALLY, BY JAMES MORGAN

Archaeologists have made a virtual reconstruction of a Roman gladiator school discovered on the banks of the River Danube in Austria.

The so-called ludus was on a scale to rival the famous ludus magnus, the gladiatorial school behind the Colosseum in Rome.

The remains at Carnuntum were mapped using sophisticated aerial surveys and ground-penetrating radar.

The archaeologists published their findings in the journal *Antiquity*.

Carnuntum was the capital of Upper Pannonia in Roman times and a major trading centre for amber.

Excavations in the late 19th and early 20th Centuries revealed many elements of the ancient settlement, including a legionary fortress and the civilian town.

It contains the ruins of amphitheatres, Roman baths and the remains of a monumental arch known as Heidentor.

The ludus was detected only in 2011, in an area to the south of the town, where little is visible on the surface.

According to this newly published survey, the school was complete with individual cells for the gladiators and a circular training arena.

Although about 100 ludi are thought to have existed in the Roman Empire, almost all have been destroyed or built over.

Please visit the site: <http://www.bbc.com/news/science-environment-26359012> [Go there for pict]

THE YUMMY MUMMIES: HOW EGYPTIANS USED GEL AND CURLING TONGS TO LOOK THEIR BEST 3,500 YEARS AGO, BY SARAH GRAHAM

Ancient Egyptians used hair gel to style their locks in everyday life, researchers have found.

A study of male and female mummies has found fashion-conscious Egyptians made use of a fat-based product to keep their hair in place.

They used the styling gel on both long and short hair, tried to curl their hair with tongs and even plaited it in hair extensions to lengthen their tresses.

It is thought they used these methods in both life and death, with corpses being styled to make sure they looked good in the afterlife.

The incredible discovery was made by archaeological scientists who studied hair samples of 18 male and female mummies, aged from four to 58 years old.

The team, from the KNH Centre of Biomedical Egyptology at the University of Manchester, was led by Dr Natalie McCreesh who studied the mummies as part of her PhD.

Using light and electron microscopes, they found that nine of the mummies had coated their hair in the fatty substance, which is thought to be a beauty product.

Some of the mummies, which were artificially preserved, show the gel was used to prepare the body for the afterlife.

But others, which were preserved naturally in dry sand, prove the product must also have been used in everyday life by the vain Egyptians.

Bizarrely, even in the artificially-preserved bodies the hair did not contain resins or embalming materials, suggesting the hair was styled separately to the mummification process.

The preserved bodies are between 3,500 and 2,300 years old, with most being excavated from a Greco-Roman cemetery in Dakhleh Oasis in the Western Desert.

Further study of the material, using gas chromatography mass spectrometry found the substance contained palmitic acid and stearic acid.

Dr McCreesh, 29, who is now a visiting scientist at the university, said research was unable to determine whether the gel was extracted from animals or plant, but was more likely to come from animals.

She added: 'The Ancient Egyptians used this fatty product just like we use gel today.

'The similarities are amazing.

'We knew that paintings in tombs have shown people with unguent cones on top of their heads, which were thought to be made of fats and scented resin.

'So we looked at hair on a selection of mummies to see if there was any trace of it.

'We found there was a fatty substance being used to hold hair in place.

'There was a variety of hair styles and cuts - some of the mummies had really beautiful curled hair.

'Under the microscope we could see the fat was used specifically on the curls, to hold them in place - just like people would now.

'One of the mummies had quite short hair and we joked she looked like Marilyn Monroe. Some others had longer curly hair, a little bit like Rihanna.

'Some of the younger men had their hair parted and slicked down with the product.

'We found the fat on the hair of nine mummies - the rest were very degraded and it wasn't possible to say for sure whether or not it was there.

'It's reasonable to think that some people would have styled their hair and others wouldn't - just like today.

'Because some of them were preserved naturally, we can see that they used it in everyday life as well as when they were being preserved in death.

'It probably wouldn't have been the very poorest, but it certainly wasn't restricted to just pharaohs or high nobility - ordinary people used it too.

'It's absolutely fascinating. You can almost imagine them tending their hair and setting their curls, just like we might today.'

The hair coating was found to contain fatty acids including palmitic acid and stearic acid, but it is hoped further research can help identify the exact recipe.

The research has now been published in the Journal of Archaeological Science.

Please visit the site: <http://www.dailymail.co.uk/sciencetech/article-2030384/The-yummy-mummies-How-Egyptians-used-gel-curling-tongs-look-best-3-500-years-ago.html>

ANCIENT ROCK CHURCH IN BULGARIA **DAMAGED DURING EU-FUNDED** **CONSERVATION WORK**

A rare ancient early medieval rock church cut from the caves that riddle the unique landscape of Yailata archaeological reserve on Bulgaria's Black Sea coast has been damaged during EU-funded reinforcement and conservation work.

A preliminary assessment of the conservation and reinforcement work recently carried out on the famed church of "Sts Constantine and Helena" has revealed the extent of the damage inflicted on this important site by badly executed and outdated restoration and conservation methods. It has yet to be established whether the crude reinforcement work has affected the important pre-Christian and Christian engravings on the church walls which hold vital clues to the medieval re-Christianization of the north-east Balkans.

Photographs show the historic monument disfigured by the use of intrusive techniques that display blatant disregard of current internationally accepted and recommended conservation standards and are archaeologically and aesthetically unacceptable. The work contravenes international conventions on the protection, conservation and management of the archaeological and cultural heritage to which Bulgaria is a party.

The botched reinforcement and conservation of the ancient monument is the first stage of a project financed by the European Union Regional Development Fund to develop the tourism potential of the Yailata archaeological reserve. The project is intended to develop tourism infrastructure such as cultural and historic attractions. However, assessments of similar projects elsewhere in Bulgaria funded by this EU programme have reported significant irretrievable damage inflicted on major archaeological sites such as the Roman fortress of Storgozia near Pleven, raising questions about the effectiveness or even the existence of EU or Bulgarian monitoring of the standards of implementation of these projects.

There is a growing public outcry in Bulgaria about these projects which are beginning to inflict substantial damage on important sites of the national archaeological and cultural heritage. The opposite effect to the one intended by the EU programme is in fact being achieved, as these 'improvements' are seriously affecting the appeal of the sites for cultural tourism and local and international visitors.

The increasing controversy over the planned EU-funded work on Yailata reserve shows how irreversible damage can be inflicted on the cultural heritage not only in conflict situations or as a result of illicit property development, but as a result of international development programmes when effective monitoring mechanisms are not implemented or are non-existent at national and international levels.

Expert and civil society groups, including environmental organizations like the For the Nature in Bulgaria coalition that includes the World Wildlife Fund (WWF) and the citizens' initiative group Independent Kamen Bryag have begun to investigate and try to

limit the escalating damage caused by these EU-funded projects, including that threatening the integrity of Yailata archaeological reserve and its unique landscape.

With its rich concentration of archaeological remains over a long span of time, from pre-historic cave dwellings to late antique (like its Byzantine fortress) and medieval monuments set in a legally-protected landscape of high biodiversity, Yailata archaeological reserve is a site of not only national, but international historical and cultural importance.

The second phase of the EU Regional Development project at Yailata proposes massive and intrusive 'restoration and reintegration' work on the early Byzantine fortress in the archaeological reserve. The fortress is often seen as one of the minor masterpieces of early Byzantine fortification architecture. The work will include controversial additions to the monument, raising the height of its walls by 3 metres.

Although Yailata is a protected area in the European network Natura 2000, no environmental impact assessment has been carried out for the project, nor has a geological assessment of the impact the added construction could have on the unstable rock structures in an area subject to earthquakes.

The poor quality of the execution of the first phase of the project has raised suspicions about the destructive effects of the planned works on the fortress and the irreparable damage it could inflict on the archaeological site and the biodiversity of the adjacent areas.

Archaeologists are concerned as the work contravenes national legislation which stipulates that 'restoration and reintegration' work should take place only upon completion of the archaeological investigation of a site. The archaeological exploration of Yailata fortress is still in its intermediary stages and the enormous works proposed will inevitably destroy unexplored archaeological remains and efface the existing archaeological evidence. New construction on the archaeological reserve is also forbidden.

Expert and public suspicions about the potentially destructive effects of this project were further heightened after 2 months ago any information about the project were removed from the website of Kavarna Municipality (which has managed the site since 2012), in contravention of EU regulations on accessibility and visibility to the public and despite the rising public interest in the programme requests for public access to its current version have not been answered.

Please visit the site: http://safeconnect.org/profiles/blogs/ancient-rock-church-in-bulgaria-damaged-during-eu-funded?xg_source=msg_appr_blogpost

THE OLDEST HUMAN INFECTIOUS DISEASE? MD ANDERSON RESEARCHER UNCOVERS SOME ANCIENT MYSTERIES OF LEPROSY

New research at The University of Texas MD Anderson Cancer Center in Houston has unearthed some of the ancient mysteries behind leprosy, also known as Hansen's disease, which has plagued mankind throughout history. The new research findings are published in the current edition of journal PLOS Neglected Tropical Diseases. According to this new hypothesis, leprosy disease may well be the oldest human-specific infection, with roots that likely stem back millions of years.

The PLOS NTG paper, entitled "On the Age of Leprosy" (doi/10.1371/journal.pntd.0002544) is co-authored by Xiang Yang Han of the MD Anderson Center, and Francisco J. Silva of the Universitat de València's Evolutionary Genetics Unit in Valencia, Spain.

Work by Xiang-Yang Han, M.D., Ph.D., a clinical pathologist and a professor in laboratory medicine at the MD Anderson Cancer Center resulted in the discovery there in 2008 of a new leprosy-causing species, called *Mycobacterium lepromatosis*. Prior to that finding, only one species of bacteria, called *Mycobacterium leprae*, was known to cause leprosy.

In their paper, Drs. Han and Silva describe Leprosy as a chronic infection of the skin and nerves caused by *Mycobacterium leprae* and the newly discovered *Mycobacterium lepromatosis*. The disease has been documented for millennia in ancient cultures including many references in the ancient Jewish scriptures and the Christian Bible. The article abstract notes that recent genomic studies of worldwide *M. leprae* strains have further traced Leprosy along global human dispersals during the past ~100,000 years.

Because leprosy bacilli are strictly intracellular, the researchers wonder how long humans have been affected by this disease-causing parasite, noting that based on recently published data on *M. leprae* genomes, *M. lepromatosis* discovery, leprosy bacilli evolution, and human evolution, it is most likely that the leprosy bacilli started parasitic evolution in humans or early hominids millions of years ago. That makes leprosy the oldest known human-specific infection.

They suggest that the unique adaptive evolution of the disease has likely molded the indolent growth and evasion from human immune defense that may explain leprosy pathogenesis. Accordingly, Drs. Han and Silva say leprosy can be viewed as a natural consequence of a long parasitism, and that the burden of leprosy may have affected minor selection on human genetic polymorphisms.

A MD Anderson Center release notes that there are hundreds of thousands of new cases of leprosy worldwide each year, but the disease is rare in the United States, with only about 100-200 new cases annually. Leprosy is known for attacking and horribly disfiguring a patient's skin and dulling nerve sensation. Effective antimicrobial treatments

exist today, but when the disease is misdiagnosed or left untreated, it lead to extensive skin lesions, deformities in the patient's face and extremities, disabilities, and even death. Leprosy also carries a social stigma and diagnosis is frequently and notoriously delayed.

Work led by paper co-author and pathologist Xiang-Yang Han, who is a professor in laboratory medicine at the MD Anderson Center, resulted in the 2008 discovery of a new leprosy-causing bacteria species, called *Mycobacterium lepromatosis*. Before that time, only one species of bacteria, called *Mycobacterium leprae*, was known to cause leprosy.

In the past several years, Dr. Han and other researchers have found the new leprosy agent in patients from Mexico, Canada, Brazil, Singapore, and Myanmar. Dr. Han's team, in collaboration with Dr. Silva, an evolutionary geneticist, analyzed 20 genes of *Mycobacterium lepromatosis* and compared them with those of *Mycobacterium leprae*.

They found the two leprosy bacteria came from a last common ancestor around 10 million years ago. Before the divergence, the common bacteria ancestor had undergone a massive reductive evolution that resulted in inactivation of approximately 40 percent of all the genes in its genome. Those genes went on to become non-functioning pseudogenes or were even lost. This reductive evolution, unique among all pathogenic bacteria known so far, was unearthed from genome sequencing of *Mycobacterium leprae* several years ago before the discovery of *Mycobacterium lepromatosis*, by another research team

Please visit the site: <http://tinyurl.com/mkef2d6> [Go there for longer text]

ITALY INVESTIGATING NEW COLLAPSES IN ANCIENT POMPEII, BY MARIO LAPORTA

The damaged wall of a tomb at the ancient ruins of Pompeii, near Naples, southern Italy. The Temple of Venus and the wall of a tomb in the long-neglected ruins of Pompeii near Naples were found damaged on Sunday, possibly due to heavy rain.

Italy's culture minister demanded explanations on Sunday after more collapses this weekend in the ancient Roman city of Pompeii raised concerns about the state of one of the world's most treasured archaeological sites.

Pompeii, preserved under ash from a volcanic eruption in 79 A.D. and rediscovered in the 18th century, has been hit by a series of collapses in recent months and years which have sparked international outcry over the neglect of the site.

Officials said the wall of a tomb around 1.7 meters (5.5 feet) high and 3.5 meters long collapsed in the necropolis of Porta Nocera in the early hours of Sunday.

That followed a smaller collapse on Saturday of part of an arch supporting the Temple of Venus. Heavy rains were cited as the immediate cause. The Temple of Venus is in an area of the site which was already closed to visitors, while access to the necropolis has been closed following the collapse of the wall.

Culture Minister Dario Franceschini, appointed last month in the new government of Prime Minister Matteo Renzi, summoned officials responsible for the site to Rome for an "emergency meeting" on Tuesday.

He said he wanted a report on the reasons for the latest collapses and would verify routine maintenance at Pompeii as well as the progress of an ambitious restoration project launched last year with European Union funds.

Italian media have highlighted the contrast between the management of Pompeii and a successful exhibition about the ancient Roman city at the British Museum in London last year, which attracted record numbers of visitors.

Pompeii, a UNESCO World heritage site, was home to about 13,000 people when it was buried under ash, pumice pebbles and dust as it endured the force of an eruption equivalent to 40 atomic bombs.

Two-thirds of the 66-hectare (165-acre) town has since been uncovered. The site attracts more than 2 million tourists each year, making it one of Italy's most popular attractions.

Please visit the site: <http://www.nbcnews.com/news/world/italy-investigating-new-collapses-ancient-pompeii-n42351>

ANCIENT EGYPTIAN SOLDIER'S LETTER HOME DECIPHERED, BY OWEN JARUS

Dating back about 1,800 years, this letter was written, mainly in Greek, by Aurelius Polion, an Egyptian man who served with the legio II Adiutrix legion around modern-day Hungary. In the letter, discovered more than a century ago in the Egyptian town of Tebunis and only recently translated, Polion pleads with his family to respond.

In the letter, written mainly in Greek, Polion tells his family that he is desperate to hear from them and that he is going to request leave to make the long journey home to see them.

Addressed to his mother (a bread seller), sister and brother, part of it reads: "I pray that you are in good health night and day, and I always make obeisance before all the gods on your behalf. I do not cease writing to you, but you do not have me in mind," it reads.

"I am worried about you because although you received letters from me often, you never wrote back to me so that I may know how you ..."

(Part of the letter hasn't survived.)

The back of the letter contains instructions for the carrier to deliver it to a military veteran whose name may have been Acutius Leon who could forward it to Polion's family. Although the Roman Empire had a military postal system, Polion appears not to have used it, entrusting the veteran instead.

Polion says he has written six letters to his family without response, suggesting some sort of family tensions.

"While away in Pannonia I sent (letters) to you, but you treat me so as a stranger," he writes. "I shall obtain leave from the consular (commander), and I shall come to you so that you may know that I am your brother ..."

Found in an ancient Egyptian town

The letter was found outside a temple in the Egyptian town of Tebtunis more than a century ago by an archaeological expedition led by Bernard Grenfell and Arthur Hunt. They found numerous papyri in the town and did not have time to translate all of them.

Recently Grant Adamson, a doctoral candidate at Rice University, took up the task of translating the papyrus, using infrared images of it, a technology that makes part of the text more legible. His translation was published recently in the *Bulletin of the American Society of Papyrologists*.

Adamson isn't sure if the soldier's family responded to his pleas, or if Polion got leave to see them (it's unlikely), but it appears this letter did arrive home.

"I tend to think so. The letter was addressed to and mentions Egyptians, and it was found outside the temple of the Roman-period town of Tebtunis in the Fayyum not far from the Nile River," Adamson wrote in an email to Live Science.

Polion, who lived at a time when the Roman Empire controlled Egypt, was part of the legio II Adiutrix legion stationed in Pannonia Inferior (around modern-day Hungary)

He may have volunteered for the pay and food legions got. However, that doesn't mean Polion knew that he was going to be posted so far away from home.

"He may have volunteered and left Egypt without knowing where he would be assigned," writes Adamson in the journal article. According to the translation, Polion sent the letter to a military veteran who could forward it to his family.

An ancient soldier, a modern problem

The situation seen in this letter, a young man serving as a volunteer in a military unit far away from home, facing tensions with his family and seeking leave to see them sounds like something that happens in modern-day armed forces.

Although soldiers today have an easier time communicating and traveling back home (Polion would have had to travel for a month or more to reach Tebtunis from his posting in Europe), there are some themes that connect both ancient and modern soldiers, Adamson said.

"I think that some aspects of military service belong to a common experience across ancient and modern civilizations -- part of our human experience in general really. Things like worry and homesickness."

The letter is now in the Bancroft Library at the University of California, Berkeley.

Editor's Note: This article was updated to change the term "legionnaire" to "legion," as the former is not as popularly used to refer to Roman legionaries.

Please visit the site: <http://www.livescience.com/43900-ancient-egyptian-soldier-letter-deciphered.html>

IN SOUTHERN IRAQ, ARCHEOLOGICAL RICHES RIVALING UR AWAIT DISCOVERY, **BY ADEL FAKHIR**

Iraq's southern Dhi Qar province is "a global museum of antiquities," dotted with hundreds of unexcavated ancient cities whose archeological treasures could rival those of the great Sumerian capital of Ur, experts say.

The imposing ziggurat of Ur, the Biblical birthplace of the Prophet Abraham and capital of a prosperous empire that ruled over Mesopotamia more than 4,000 years ago, could be one among many such monuments, according to Amer Abdul Razaq, an Iraqi antiquities expert.

"The archaeological sites in Dhi Qar may contain more than one ziggurat, which were mostly places of worship for the people of Sumer and Babylon," he says.

"We must highlight important and significant kingdoms and empires in the province of Dhi Qar," Razaq adds, likening the area to "a global museum of antiquities."

"There are more than 1,200 cities comparable and equivalent to the archeological city of Ur," waiting to be unearthed, he says.

"Ur of the Chaldees," mentioned several times in the Bible, was first excavated in the 1850s by the British consul John George Taylor.

Razaq notes that the archaeological site of the ancient Sumerian Kingdom of Lagash, which lies north of the Dhi Qar capital of Nasiriyah, is the largest in the Middle East, spreading over an area of 1,600 square kilometers.

The Sumer region was long believed to have been inhabited around 4,500 BC. But flint, stone tools and other relics discovered there now lead archeologists to believe that the area was inhabited by an unknown prehistoric people who are termed the "Ubaid."

Ninety kilometers north of Nasiriyah lies a city called Umm al-Ajarib (Mother of Scorpions) and the Kingdom of Ki An, in an area that cradles one of the oldest agricultural villages of Mesopotamia.

In addition, there are more than 400 archeological sites dating back to the Islamic Abbasid era.

"These sites are all unexcavated. Substantial sums of money are needed to make a quantum leap in the field of antiquities and archeological tourist cities in the province and to set up a museum worthy of the antiquities," Razaq says.

Hussein Sharifi, an Iraqi MP and member of the Commission of Tourism and Antiquities, agrees.

"The government must develop plans and strategic programs to improve the reality of tourism in the field of archeology," he says.

Many of the old sites in Dhi Qar have recently attracted a large number of international exploration missions, Iraqi officials say.

The important site of Tel Khyber is being excavated by a British mission, following an agreement between Manchester University and Iraq's Ministry of Tourism and Antiquities.

"The British team came back again for excavations for the second season at the archeological site of Khyber, after they discovered artifacts in the first season that dated back to the era of ancient Babylon, the first dawn dynasties," explains Wissal Naim, director of the Archeological Inspectorate of Dhi Qar.

She adds that an Italian team also has returned to continue work on the site of Tal Abu Tberh, and a Belgian team is working on the site of Tel Yuha.

"The governorate allocated two billion Iraqi dinars from the budget last year, as a first step for the maintenance of the royal cemetery and the ziggurat of Ur," Naim explains.

There have been no major excavations at Ur since digs funded in the 1920s and 1930s by the British Museum and the University of Pennsylvania. Experts say that only 10 percent of the site has so far been excavated, and that treasures may lie literally under the feet of excavators and visitors.

Last November, more than 150 Christians, including clergymen, nuns and ordinary worshippers from the cities of Basra and Amarah, performed a spiritual pilgrimage near the house of the Prophet Abraham, singing hymns and calling for peace to be restored to Iraq's war-torn provinces.

Please visit the site: <http://rudaw.net/english/middleeast/iraq/06032014>

HOW CELESTIAL EVENTS INFLUENCED ORIENTATION OF THE GREAT CONSTRUCTIONS OF THE NABATAEANS

The movement of the Sun in the skies of Petra determined the way in which the monuments of this and other Nabataean cities were erected.

This is according to a statistical analysis on the spatial position of their palaces, temples and tombs carried out by scientists from Instituto de Astrofísica de Canarias (IAC) and CSIC, Spain, and the University of Perugia (Italy).

The results, published by the 'Nexus Network Journal', indicate that those great buildings were erected bearing in mind the equinoxes, solstices and other astronomical events that determined the Nabataean religion. The Nabataeans prospered in the first century BC and the first century AD in what is now Jordan and neighbouring countries.

"The Nabataean monuments are marvellous laboratories where landscape features and the events of the sun, moon and other stars interact," Juan Antonio Belmonte, researcher of IAC and coordinator of the study, stressed to SINC.

"The astronomical orientations were often part of an elaborate plan," he added "and, possibly, a mark of the astral nature of their religion, which showed incredible 'hierophanies' or demonstrations of the sacred on monuments related to cultic times and worship".

A clear example is seen in Ad Deir, the Monastery at Petra. During the winter solstice, the light of the setting sun entering through the gate of the monument illuminates the sacred motab. It is a podium where some stone blocks, which represent divinities such as the god Dushara, are placed.

"The effect is spectacular, and would have only been observable during the few days closest to this solstice," commented Belmonte, who also emphasises how, just in this moment, another curious phenomenon is produced. As observed from the motab itself, the setting of the sun recreates the aspect of the head of a lion, the animal of the Nabataean goddess Al Uzza, on the opposite rocks.

Mathematical calculations also show the astronomical plan that the Urn Tomb follows, another famous monument where king Malichus II is thought to be buried. Its main gate is centred with its environment according to the equinox sunset, when the day equals the night, and the solar rays during the summer and winter solstices establish the two interior corners of the building.

"This amazing set of three alignments within the plan of the tomb, in combination with significant features in the distant horizon can hardly be ascribed to chance," underlined Belmonte. "We consider that it is a deliberate attempt to convert the hall of the Urn Tomb into a type of time-keeping device".

When in 446 AD the Christian Bishop Jason converted the Urn Tomb into the Cathedral of Petra, the solstitial markers also served as a reference in determining Christmas Eve (24 December) and St. John the Baptist (24 June), the date on which the monument was consecrated to the new religion.

Please visit the site: <http://phys.org/news/2014-03-celestial-events-great-nabataeans.html>

EGYPT'S WIDAN AL-FARAS: THE WORLD'S OLDEST ROAD ALL BUT FORGOTTEN CLOSE TO FAYOUM LIES THE WORLD'S OLDEST SURVIVING PAVED ROAD, THREATENED BY OBLIVION AND NEGLECT, BY MOHAMMED ELRAZZAZ

You can think of it as an ancient cultural landscape, or you can think of it as a fossil landscape. One thing is certain: it is the world's oldest surviving paved road, and -- if nothing is done to protect it -- it will eventually vanish completely.

Widan Al-Faras quarry road was built some 4,500 years ago in the area situated north of present-day Lake Qarun.

As we approached Widan Al-Faras area ("ears of the mare"), easily recognisable by its twin peaks, we knew we had a tough task ahead: locating a road in the middle of nowhere and stretching into infinity.

The road was built for moving blocks of basalt from the Widan Al-Faras mines to the shore of the ancient Lake Moeris, the bigger ancestor of Lake Qarun. The road ended in a quarry not far from Qasr Al-Sagha Temple, an Old Kingdom temple still standing north of Lake Qarun. From there, the basalt was moved via Bahr Youssef to the Nile, and from there to the Giza Plateau, where it was used in building sarcophagi and floors of mortuary temples around the Giza Pyramids.

Case study on recklessness

We felt the wind run beneath our ears like a ribbon of silk. I am not sure if this is how the Ancient Egyptian mine workers felt as they laboured under the desert sun. We finally located the quarry road, and we were silently experiencing a cascade of mixed feelings: contemplating something that old and that magnificent, we were awe-inspired, then camera crazy.

Nevertheless, as we traced the quarry road that stretched across the North Fayoum Desert like an ancient serpent god, we quickly came to realise two important -- and saddening -- things. First, the road is neither protected nor signposted. Second, and as a consequence of the absence of any protection, large stretches of the road have disappeared completely. Desert safaris by four-wheel drive vehicles, and uncontrolled tourism, have done obvious damage to the road, while irresponsible "trophy hunters" have carried away fragments of the road as souvenirs, adding to the problem. Together, these factors did to the road what over 4,000 years of weathering and erosion did not do.

Road less traveled

Building an 11-kilometre road in the desert and having it equipped to move massive basalt blocks thousands of years ago sounds like mission impossible, but when you remember the other architectural feats of Ancient Egypt, everything becomes imaginable. The Ancient Egyptian workers had to use not only slabs of limestone and sandstone, but also logs of petrified wood to stabilise the road. Moreover, desert sand keeps encroaching and burying everything.

The road is about two metres wide. The petrified wood logs are brilliantly black. The whole area is one unique example of what experts would call an industrial landscape (in this case, a quarry landscape) where one can get the full picture of the mining process.

You can visit the mines where they cut the stones, the purpose-built quarry road used to transport them, traces of encampments, and the final stage of the road (the quay) close to Qasr Al-Sagha site.

Nevertheless, you would need to visit to Giza Pyramids if you want to understand the "final use" of the Widan Al-Faras basalt: the floor of the Khufu (Cheops) funerary temple is a good example, and so are the mortuary temples of Userkaf, Sahure and others.

Exotic itinerary

Back in Widan Al-Faras, our visit had to follow the "logical" sequence of things in the region. That meant a visit to Midde Kingdom temple of Qasr Al-Sagha (built on the site of an Old Kingdom one) followed by a visit to the Greco-Roman city of Dimai (Dima, of Ptolemaic origin).

The massive stones of the otherwise insignificant Qasr Al-Sagha and the mudbrick walls of the abandoned Dimai seem to defy time, standing against all the odds and bearing witness to the shifting shores of the lake over the millennia. Several other attractions can be visited around the lake.

The entire zone of Gebel Qatrani Area and Lake Qarun Nature Reserve is on the "Tentative Lists" of UNESCO alongside tens of other Egyptian sites. The submission was made in 2003 with the description: "(The site) allows for insights into the enormous feats of mass stone transportation during the pyramid age and its connection with ancient Lake Moeris." Over 10 years have passed since the submission, but little -- if anything -- has been done to protect the area.

Please visit the site:

<http://english.ahram.org.eg/NewsContent/9/0/94839/Heritage/0/Egypt-1/Widan-Al-Faras-The-world%E2%80%99s-oldest-road-all-b.aspx>

SARDIS DIG YIELDS ENIGMATIC TROVE: RITUAL EGG IN A POT, BY TERRY DEVITT

A ritual deposit, found intact beneath a first century Roman house in Sardis. The deposit, found inside two bowls, includes a number of small implements, a unique coin and an egg. The hole in the egg was made in antiquity.

By any measure, the ancient city of Sardis -- home of the fabled King Croesus, a name synonymous with gold and vast wealth, and the city where coinage was invented -- is an archaeological wonder.

The ruins of Sardis, in what is now Turkey, have been a rich source of knowledge about classical antiquity from the 7th century B.C., when the city was the capital of Lydia, through later Greek and Roman occupations.

Scholars digging at Sardis, the capital of ancient Lydia later occupied by Greeks and Romans. Sardis, in modern Turkey, was the fabled home of King Croesus, the richest man of his day, according to lore.

Now, however, Sardis has given up another treasure in the form of two enigmatic ritual deposits, which are proving more difficult to fathom than the coins for which the city was famous.

"The two deposits each consist of a small pot with a lid, a coin, a group of sharp metal implements and an egg, one of which is intact except for a hole carefully punched in it in antiquity," explains Will Bruce, a classics graduate student at the University of Wisconsin-Madison who has been digging at Sardis for the past six years. Bruce made the finds last summer.

The dig at Sardis is overseen by Nicholas Cahill, a UW-Madison professor of art history. Cahill has directed field research at Sardis for decades. Both ritual deposits, says Cahill, date from the Roman era of Sardis, about A.D. 70 or 80.

An inverted bowl, covering another bowl with a ritual deposit, emerges from the earth. The bowls contained a ritual deposit of a coin, small metal implements and an egg.

Bruce and his team were excavating below the floor of a first century room, built over the ruins of an earlier building, which had probably been destroyed in a massive earthquake in A.D. 17.

Digging beneath the floor, Bruce and his colleagues first uncovered a thin-walled, nearly intact jug and, nearby, an assemblage of mostly unbroken pottery. "It looked like we were reaching a more intact deposit instead of fill," says Bruce.

Within that assemblage, Bruce began to carefully uncover an inverted bowl, which turned out to be sitting on top of another bowl. The bowls, still filled with dirt, were carefully removed and immediately turned over to conservators who cleaned and

dissembled them to find a set of small pointed instruments, a coin with a lion and portrait of Nero, and the intact egg.

Graduate student Will Bruce excavates a coin horde at Sardis, which was the home of King Croesus, a name synonymous in myth and history with gold and wealth.

"The ritual offerings were dug into pits in the floor, after the room was constructed," says Cahill. "We know they were renovating the room periodically, because in another part of the space there was a dump of painted wall plaster buried under the floor, presumably in a renovation."

"The meaning of these deposits is still quite open to interpretation," notes Cahill, "but burying votive deposits below ground or in a wall was a fairly common practice," perhaps as a ritual offering to protect the house. Roman literary sources suggest eggs were used in particular rituals.

For the archaeologists, part of the intrigue is that similar groups of bowls, needles, coins and eggs were discovered at Sardis more than 100 years ago when the temple of Artemis was excavated by Princeton University archaeologists. "It is an exact parallel to what they found in the early 20th century," according to Cahill.

A gold coin found at Sardis. Another coin, bearing the likeness of Emperor Nero, was also found.

The coin was also unique. Sardis is famous as the place where coinage was invented in the Western world, first using electrum, an alloy of silver and gold, and later of pure gold and silver. Nearby sources of gold made ancient Lydia, and King Croesus, fabulously wealthy. While these Lydian coins are very rare, coins and coin hoards from later Greek and Roman occupiers of Sardis are routinely found.

But the coin found with the egg, says Cahill, seems to be special.

"The coin has a portrait of Nero on the front. The original reverse was hammered flat, and the image of a lion engraved in its place, which is very odd." Expert numismatists have never seen anything like it. "The image of the lion is important because it is emblematic of the Lydian kings and of their native mother goddess Cybele," Cahill says.

The discovery is unusual, Cahill notes, because finding ritualistic objects intact and in place after thousands of years is no everyday discovery, even in a rich archaeological context such as Sardis.

"Ancient ritual was important to people. It is most unusual to find such fragile things so perfectly preserved.

Please visit the site: <http://www.news.wisc.edu/22597> [Go there for pix]

SECRET OF ROMAN BRIDGES

Discovering hidden arches, visualising the sloped outline characteristic of the medieval period, finding a Renaissance engraving on a Roman arch or detecting restorations: these are some of the results that have been obtained by researchers at the University of Vigo (Spain) in their study of more than 80 Roman and medieval bridges. The assessment was carried out with the help of a ground-penetrating radar, a laser scanner and mathematical models, technology that benefit conservation.

In recent years, UNESCO and other organisations concerned with the conservation of cultural heritage have underlined the importance of using non-destructive methods to document monuments' characteristics and evaluate their state of conservation.

Along these lines, researchers from the Applied Geotechnology Group at the University of Vigo have used laser and radar to study, using light beams and waves, around 85 ancient bridges in north-west Spain. The latest bridge to be studied: Monforte de Lemos, in Lugo, according to the Journal of Bridge Engineering.

"As well as obtaining information like the thickness of the stones inside, the GPR has reported the existence of two hollow arches in this medieval bridge, hidden underground at one of the edges," Dr. Mercedes Solla, one of the authors and current professor at the Defence Academy (Marín, Pontevedra), explains.

The GPR comprises an antenna that emits and receives short pulses, a control unit and a computer. The ensemble can be set up in a type of cart, in which the system is installed or in a mobile survey vehicle to collect data along the road of the bridge.

"The information from this system is combined with the information provided by the LiDAR or terrestrial laser scanner, whose beam sweeps over the whole bridge and in a few minutes takes the XYZ coordinates of millions of points of the monument," says Solla. The result is a point cloud, from which detailed plans and 3D models of the bridge can be obtained.

This has led to the detection of unknown structural and geometric details, including cracks in many of the constructions. In some cases, such as in the Roman bridge of Segura, between the municipalities of Piedras Albas (Cáceres, Spain) and Segura (Portugal), this technology has also been used to detect the remainders of a Renaissance engraving in one of the arches.

In another Roman bridge, in Lugo, researchers have identified restorations carried out over time, differentiating between areas where granite has been used (the waves of the radar spread faster) and others where schist is present, a material which has a lower conductivity. It has also been detected that the outline of the bridge sloped upwards and downwards during the Middle Ages, although today it is level.

According to Solla, "all this information is of historic interest, but it is also useful to civil engineers so that they can plan conservation, improvement and restoration measures in these types of infrastructures."

The researchers are currently working with a mobile bridge survey vehicle that comprises a mobile 3D laser scanner, a GPR, thermographic cameras and a surface 'profilometer'. The initiative is part of a European project for the application of technologies for infrastructure management and inspection (known in Spanish as SITEGI).

Story Source:

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Mercedes Solla, Belén Riveiro, Henrique Lorenzo, Julia Armesto.
Ancient Stone Bridge Surveying by Ground-Penetrating Radar and Numerical Modeling Methods. *Journal of Bridge Engineering*, 2014; 19
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Please visit the site:

<http://www.sciencedaily.com/releases/2014/03/140312082633.htm>

GREEK ISLAND OF SANTORINI VOLCANO **ERUPTED IN 16TH CENTURY,** **BY ABED ALLOUSH**

According to a recent international study, the volcano of the island Santorini, Greece, erupted in the 16th century BC and not earlier. The survey characterized a number of research studies that took place in the past and have indicated that Santorini's volcano may have erupted a century earlier, as unreliable because the method based on tree-ring measurements that they used, could not provide them with accurate results.

An international team of researchers led by Paolo Cherubini from the Swiss Federal Institute for Forest, Snow and Landscape Research (WSL) has demonstrated in the scientific journal *Antiquity*, that this method cannot provide reliable results. The scientists show that the 14C dating of individual pieces of olive wood enveloped by volcanic ash is too unreliable for precise dating.

"Investigating such wood samples only makes sense if it can be clearly shown that the trees were still alive at the time of the eruption. In the case of old olive trees in the Mediterranean region, it is not at all unusual for dead branches to stay in place for several decades," says Paolo Cherubini. If 14C dating is carried out, it must use an international reference curve, which in the case of the period of the volcanic eruption is based on tree-ring measurements from trees that are more than 4,000 years old.

According to Cherubini, the uncertainties mentioned above can easily give rise to differences of several decades in the dating of Santorini's eruption. Therefore, he believes that the hypothesis that Santorini's volcano erupted almost a century earlier cannot be confirmed using current methods. In his opinion, answers are more likely to be found through interdisciplinary research involving close cooperation between archaeologists, climatologists, geoscientists, dendroclimatologists and historians, allowing a general view of the situation to emerge.

The question whether this natural disaster occurred 3,500 or 3,600 years ago is of great historiographical importance and has indeed at times been the subject of heated discussion among experts. The traditional belief that the volcano erupted during the 16th century BC, seems to be confirmed by this new study.

Please visit the site: <http://greece.greekreporter.com/2014/03/08/greek-island-of-santorini-volcano-erupted-in-16th-century/>

ARCHAEOLOGIST LINKS GRAVES EXCAVATED IN NORTHERN GREECE WITH ANCIENT KINGS OF MACEDONIA

A Greek archaeologist says she has discovered 20 new burials near Macedonia's ancient capital in northern Greece, and some could tentatively be associated with the early Macedonian kings.

Excavator Angeliki Kottaridi says two of the poorly preserved graves excavated in a cemetery between 2012-2013 "might perhaps be linked" with Alexander I and his son, Perdiccas II.

Both reigned in the 5th century B.C., a century before the most famous ancient Macedonian king, Alexander III the Great.

In a statement Thursday, Kottaridi said the graves at Vergina -- believed to be ancient Aegae -- were looted and largely dismantled in antiquity. Surviving finds included vases and a sword.

A rich burial excavated decades ago at Vergina has been linked with Phillip II, father of Alexander the Great, although many experts disagree.

Please visit the site: <http://www.foxnews.com/science/2014/03/13/greek-archaeologist-graves-ancient-macedonia/>

EGYPTIANS MAY HAVE DOMESTICATED CATS EARLIER THAN THOUGHT

At the ancient Egyptian site of Hierakonopolis, in a cemetery containing the remains of humans, baboons, leopards, and hippopotamuses, archaeologists have found the skeletons of six cats, buried together near the wall of the cemetery, that could push the date of cat domestication in Egypt back to 6,000 years ago. An examination of the cats' teeth and bones showed that there were two young adults of about a year old, and four kittens from at least two litters, all probably of the species *Felis silvestris*, a small wildcat found in Africa, Europe, and central Asia. One litter of kittens was only slightly older than the other, suggesting that the natural reproductive cycle had been interrupted, perhaps with food and human care. "The last word on cat domestication (when and where) is not yet said," bioarchaeologist Wim Van Neer of the Royal Belgian Institute of Natural Sciences and Catholic University, Leuven, told [Live Science](#). "We want to investigate whether there was only one domestication center (in the Levant), or whether Egypt should also be considered as a second, later, domestication center."

Please visit the site: <http://archaeology.org/news/1906-140317-egypt-cats-domestication/1906-140317-egypt-cats-domestication>

4,000-YEAR-OLD MUMMY TO GO BACK ON DISPLAY AFTER EVADING CRYSTAL DEATH

Expert conservation work has been carried out on an Egyptian mummy given to Warrington Museum and Art Gallery more than 100 years ago

A 4,000-year-old mummy case, attacked by a mysterious surface growth of white crystals more than a century after being gifted to Cheshire by a party returning from Egypt, will go back on show in Warrington thanks to the skilful handiwork of an expert from National Museums Liverpool.

Partly recycled from an earlier coffin due to a scarcity of wood in Egypt, the tomb once held the body of Pa-ikh-mennu, a man who worked at the temple of Amun in Thebe in modern Luxor. It was given to the museum by the Egypt Exploration Society in 1905, but has suffered from loose paint as well as the unusual invasion.

"The crystals were developing on areas of restoration carried out 30-40 years ago," says conservator Tracey Seddon.

"They were causing the paint to crumble and lift.

"Fortunately the Ancient Egyptian paintwork was spared, but the rot was disfiguring the coffin and threatening to damage the artwork of the ancient craftsmen."

A thin adhesive solution should prevent further loss. Patches have been attended to with archival quality paint, although curators decided against reapplying lost areas of the paint scheme, which they felt could have been "misleading" for visitors and scholars.

The mummy is expected to return to its display case by the beginning of April.

Please visit the site: <http://www.culture24.org.uk/history-and-heritage/archaeology/art473399-4000-year-old-mummy-back-display-after-evading-crystal-death> [Go there for pix]

MASSIVE STATUES OF EGYPTIAN PHARAOH AMENHOTEP III IN THE LUXOR VALLEY

ARCHAEOLOGISTS have unveiled two colossal statues of Pharaoh Amenhotep III in Egypt's famed temple city of Luxor, adding to an existing pair of world-renowned tourist attractions.

The two monoliths in red quartzite were raised at what European and Egyptian archaeologists said were their original sites in the funerary temple of the king, on the west bank of the Nile.

The temple is already famous for its existing 3400-year-old Memnon colossi -- twin statues of

"The world until now knew two Memnon colossi, but from today it will know four colossi of Amenhotep III," said German-Armenian archaeologist Hourig Sourouzian, who heads the project to conserve the Amenhotep III temple.

The existing two statues, both showing the pharaoh seated, are known across the globe.

The two restored additions have weathered severe damage for centuries, Sourouzian said.

"The statues had lain in pieces for centuries in the fields, damaged by destructive forces of nature like earthquake, and later by irrigation water, salt, encroachment and vandalism," she said on Sunday, as behind her excavators and local villagers washed pieces of artefacts and statues unearthed over the past months.

"This beautiful temple still has enough for us to study and conserve."

One of the "new" statues -- its body weighing 250 tonnes -- again depicts the pharaoh seated, hands resting on his knees. It is 11.5 metres tall, with a base 1.5 metres high and 3.6 metres wide.

Archaeologists said with its now missing double crown, the original statue would have reached a height of 13.5 metres and weighed 450 tonnes.

The king is depicted wearing a royal pleated kilt held at the waist by a large belt decorated with zigzag lines.

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Please visit the site: <http://www.news.com.au/technology/science/massive-statues-of-egyptian-pharaoh-amenhotep-iii-in-the-luxor-valley/story-fnjw1aw-1226863104891>
[Go ther for pix]

ANCIENT SKELETON YIELDS EARLIEST COMPLETE EXAMPLE OF HUMAN CANCER

Found at archaeological site of Amara West in northern Sudan, the find could shed light on evolution and history of the disease.

Archaeologists have found the oldest complete example in the world of a human with metastatic cancer in a 3,000 year-old skeleton.

The findings are reported in the academic journal PLOS ONE today (17 March, 2014).

The finding came from a skeleton of a young adult male found by a Durham University PhD student in a tomb in modern Sudan in 2013.

Dating back to 1200 BCE, it was estimated to be between 25-35 years old when he died and was found at the archaeological site of Amara West in northern Sudan, situated on the Nile, 750 km downstream of the country's modern capital, Khartoum. It was buried extended on his back, within a badly deteriorated painted wooden coffin, and provided with a glazed faience amulet as a grave good.

The skeleton was examined by experts at Durham University and the British Museum using radiography and a scanning electron microscope (SEM) which resulted in clear imaging of the lesions on the bones. It showed cancer metastasized on the collar bones, shoulder blades, upper arms, vertebrae, ribs, pelvis and thigh bones. It is the oldest convincing complete example of metastatic cancer in the archaeological record.

Lead author, Michaela Binder, a PhD student in the Department of Archaeology at Durham University, excavated and examined the skeleton.

She said: "Our analysis showed that the shape of the small lesions on the bones can only have been caused by a soft tissue cancer even though the exact origin is impossible to determine through the bones alone."

"Insights gained from archaeological human remains like these can really help us to understand the evolution and history of modern diseases," she added. "Very little is known about the antiquity, epidemiology and evolution of cancer in past human populations apart from some textual references and a small number of skeletons with signs of cancer."

The cause of the cancer can only be speculative but the researchers say it could be as a result of environmental carcinogens such as smoke from wood fires, through genetic factors, or from infectious diseases such as schistosomiasis which is caused by parasites.

They say that an underlying schistosomiasis infection seems a plausible explanation for the cancer in this individual as the disease had plagued inhabitants of Egypt and Nubia since at least 1500 BCE, and is now recognised as a cause of bladder cancer and breast cancer in men.

The researchers from Durham University and the British Museum say the discovery will help to explore underlying causes of cancer in ancient populations and provide insights into the evolution of cancer in the past. Ancient DNA analysis of skeletons and mummies with evidence of cancer can be used to detect mutations in specific genes that are known to be associated with particular types of cancer.

Even though cancer is one of the world's leading causes of death today, it remains almost absent from the archaeological record compared to other pathological conditions, giving rise to the conclusion that the disease is mainly a product of modern living and increased longevity. These findings suggest that cancer is not only a modern disease but was already present in the Nile Valley in ancient times.

Previously, there has only been one convincing, and two tentative, examples of metastatic cancer predating the 1st millennium BC reported in human remains. However, because the remains derived from early 20th century excavations, only the skulls were retained, thus making a full re-analysis of each skeleton, to generate differential (possible) diagnoses, impossible.

Co-author, Dr Neal Spencer from the Department of Ancient Egypt and Sudan at the British Museum, said: "From footprints left on wet mud floors, to the healed fractures of many ancient inhabitants, Amara West offers a unique insight into what it was like to live there - and die - in Egyptian-ruled Upper Nubia 3200 years ago."

Michaela Binder added: "Through taking an evolutionary approach to cancer, information from ancient human remains may prove a vital element in finding ways to address one of the world's major health problems."

The tomb, where the skeleton was found, appears to have been used for high-status individuals from the town, but not the ruling elite, based on the tomb architecture and aspects of funerary ritual.

The tomb's architecture is evidence of a hybrid culture blending Pharaonic elements (burial goods, painted coffins) with Nubian culture (a low mound to mark the tomb).

The well preserved pottery recovered from the tomb provides a date within the 20th Dynasty (1187-1064 BCE), a period when Egypt ruled Upper Nubia, endured conflicts with Libya and while pharaohs such as Ramses III were being buried in the Valley of the Kings.

The research was funded by the Leverhulme Trust and the Institute of Bioarchaeology Amara West Field School, with the permission of the National Corporation of Antiquities and Museums in Sudan.

Please visit the site: <http://popular-archaeology.com/issue/03012014/article/ancient-skeleton-yields-earliest-complete-example-of-human-cancer> [Go there for many pix]

ANCIENT CARVING SHOWS ROMAN EMPEROR DRESSED AS PHARAOH, BY OWEN JARUS

An ancient stone carving on the walls of an Egyptian temple depicts the Roman emperor Claudius dressed as an Egyptian pharaoh, wearing an elaborate crown, a team of researchers has discovered.

In the carving, Emperor Claudius, who reigned from A.D. 41 to 54, is shown erecting a giant pole with a lunar crescent at the top. Eight men, each wearing two feathers, are shown climbing the supporting poles, with their legs dangling in midair.

Egyptian hieroglyphs in the carving call Claudius the "Son of Ra, Lord of the Crowns," and say he is "King of Upper and Lower Egypt, Lord of the Two Lands." The hieroglyphs say he is raising the pole of the tent (or cult chapel) of Min (an ancient Egyptian god of fertility and power) and notes a date indicating a ritual like this took place around the summertime researchers say. It would have taken place even though Claudius never visited Egypt. A cult chapel is a place of worship and a tent could also be used for this purpose. [See Photos of the Egyptian Carving and Emperor]

The elaborate crown on Claudius consists of three rushes (plants) set on ram horns with three falcons sitting on top. Three solar discs representing the sun (one for each plant) are shown in front of the rushes. Egyptian rulers are shown wearing crowns like this relatively late in ancient Egyptian history, mainly after 332 B.C., and they were worn only in Egypt. The Roman Empire took over Egypt in 30 B.C., and while the Roman emperors were not Egyptian, they were still depicted as pharaohs Egyptologists have noted.

In the recently discovered carving, the god Min is shown wearing his own crown and has an erect penis, because Min was a god of fertility, the researchers said. The hieroglyphs describe Min as "the one who brings into control the warhorses, whose fear is in the Two Lands."

Min tells Claudius, "I give you the (southern) foreign lands," which researchers say could be a reference to the deserts surrounding the Nile River, where minerals could be quarried.

The scene was discovered on the western exterior wall of the Temple of Isis at Shanhur, located on the east bank of the Nile River about 12 miles north of Luxor. It is an Egyptian temple built and decorated during the Roman occupation under Augustus (who reigned from about 30 B.C. to A.D. 14) through to Trajan (who reigned from A.D. 98 to 117).

The pole-raising scene was first found during the 2000-2001 excavation season and was recorded in full during the 2010 epigraphic (recording) season. The temple originally had 36 scenes on each of its eastern and western exterior walls, and this new scene, protected for millennia by a layer of dirt, is one of the best preserved.

The study was published recently in the journal *Zeitschrift für ägyptische Sprache und Altertumskunde* by Martina Minas-Nerpel, a Reader (the American equivalent of an associate professor) at Swansea University in the United Kingdom, and Marleen De Meyer, a postdoctoral researcher at KU Leuven University in Belgium. Careful line drawings of the scene were done by Troy Sagrillo, a senior lecturer at Swansea University.

Roman pharaohs

Although Cleopatra is often called the "last pharaoh of Egypt," the Egyptian priests depicted the Roman emperors as pharaohs up until the fourth century A.D. The Roman emperors allowed, or even encouraged, these depictions in Egyptian temples in order to keep Egypt which was an important Roman province stable. [Cleopatra & Olympias: Top 12 Warrior Moms in History]

"Although we know that Claudius, as most Roman emperors, never visited Egypt, his rule over the land at the Nile and the desert regions was legitimized through cultic means," Minas-Nerpel and De Meyer wrote in the journal article. "By decorating the exterior temple wall with this ritual, Claudius theoretically received Min's characteristics and thus his ability to rule over Egypt."

The researchers noted that similar scenes showing a pole being raised for the god Min date as far back as 4,300 years ago, during the age when pyramids were being built in Egypt. This tradition of creating pole-raising scenes was continued into the period of Roman rule.

Real-life ritual

In addition, the date on the carving indicates that a ritual like this took place in real life, the researchers said, adding that people may have climbed the central pole of the chapel of Min. In fact, a priest may have stood in for the absent Claudius, and a statue could have been used to represent Min, Minas-Nerpel said.

"What we see depicted on the temple scene is the ideal scenario," Minas-Nerpel told Live Science. She added that, even before the Romans took over Egypt in 30 B.C., Egypt's pharaohs were unable to take part in each temple ceremony in person, and stand-ins would have been necessary.

Lettuce scene

Another ritual offering at the Shanhur temple depicted at the axially corresponding scene on the eastern exterior wall shows Claudius giving an offering of lettuce to Min, which symbolizes the continued fertility of Egypt. It is located on the east wall and did not have to be excavated. In this scene, the Egyptian god Horus (shown as a child) is depicted between the two.

"[Take for] you the lettuce in order to unite it with your body (or phallus)," Claudius says to Min in hieroglyphs shown on the depiction. At one point, Claudius says, "One is in fear when seeing your face."

The two scenes highlight fertility and victorious power, both of which were important for legitimizing the rule of an absent Roman emperor who wanted to control Egypt, Minas-Nerpel and De Meyer wrote.

The Shanhur project and team

In 2009, Minas-Nerpel (principal investigator) and Harco Willems, a professor of Egyptology at the KU Leuven in Belgium, were jointly awarded the research grant by the Gerda Henkel-Foundation of Dsseldorf, Germany, to continue research at the temple of Isis at Shanhur in Upper Egypt. The project was also sponsored by the Engineering and Physical Science Research Council in the United Kingdom. The international team also included De Meyer, Peter Dils (of the Universitt Leipzig in Germany), Ren Preys (of the Facults Universitaires Notre-Dame de la Paix in Namur and KU Leuven), and Sagrillo. In Egypt, the mission was supported by the Supreme Council of Antiquities, theDeutsches Archologisches Institut, Cairo (DAI) and the Nederlands-Vlaams Instituut in Cairo.

An article on Shanhur temple by De Meyer and Minas-Nerpel can be seen on the UCLA Encyclopedia of Egyptology at<http://escholarship.org/uc/item/5hc3t8dh>.

Please visit the site: <http://www.foxnews.com/science/2014/03/27/roman-emperor-dressed-as-egyptian-pharaoh-in-newfound-carving/>
