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Πληροφοριακό Δελτίο της Ελληνικής Αρχαιομετρικής Εταιρείας

- Δεκέμβριος 2016 -

**Δεν υπάρχει τίποτε πιο άνισο από την ίση μεταχείριση των
ανίσων.**
(Αριστοτέλης)

Newsletter of the Hellenic Society of Archaeometry

- December 2016 -

Nr. 189

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Glassmaking may have begun in Egypt, not Mesopotamia Artifacts from Iraq
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Metropolis discovered in Abydos in the Upper Egypt's governorate of Sohag
A necropolis and residential settlement were uncovered in Abydos in Sohag,

almost 400 km south of the temple of King Seti I, by Nevine El-Aref **page 68**



ΣΥΝΕΔΡΙΑ - CONFERENCES/WORKSHOPS

10TH INTERNATIONAL SYMPOSIUM ON THE CONSERVATION OF MONUMENTS IN THE MEDITERRANEAN BASIN (10TH MONUBASIN), NATIONAL TECHNICAL UNIVERSITY OF ATHENS (NTUA, SCHOOL OF CHEMICAL ENGINEERING, MATERIAL SCIENCE AND ENGINEERING SECTION), ATHENS, GREECE, 20TH-22ND SEPTEMBER 2017 ATHENS, GREECE, 1ST ANNOUNCEMENT & CALL FOR ABSTRACTS

Dear Colleagues,

We have the great pleasure to announce that the **National Technical University of Athens (NTUA, School of Chemical Engineering, Material Science and Engineering Section)** will be organizing the **10th International Symposium on the Conservation of Monuments in the Mediterranean Basin (10th MONUBASIN)**.

The 10th MONUBASIN will **be held in Athens, Greece, from the 20th to the 22nd of September 2017**, and will follow the previous symposia that were held in Bari (1989), Geneva (1991), Venice (1994), Rhodes (1997), Seville (2000), Lisbon (2004), Orléans (2007), Patras (2010) and Ankara (2014), respectively.

The Symposium topic is: "**Natural and Anthropogenic Hazards and Sustainable Preservation**", which refers to the natural and anthropogenic hazards on monuments, as well as to the technologies used for the sustainable preservation of Cultural Heritage.

Important dates:

- 17/10/2016 Conference Announcement
- 31/01/2017 Abstract submission deadline
- 31/05/2017 Full papers submission deadline
- 20/06/2017 Early registration deadline
- 15/07/2017 Symposium program announcement
- 20/09/2017 Symposium starting day

Call for Abstracts:

Authors are invited to submit an abstract (2 pages maximum) by **31st of January 2017**, through the online submission system using the proposed format (click here for the [author guidelines](#)). Contributions are encouraged, but not limited to, on the following topics:

1. Historical and Structural Aspects of Monuments
2. Natural and Anthropogenic Damage Hazards
3. Methodologies for Characterization and Damage Assessment
4. Digital Techniques for Cultural Heritage

5. Technologies for Damage Rehabilitation and Sustainable Preservation
6. Planning and Cultural Heritage Management

During the 10th Symposium, the **Monubasin Digital Repository (MDR)** will be presented to the participants. The MDR will offer access to all previous Symposiums' proceedings (more than 900 papers) providing various methods of search (e.g. full-text search, by author name, by paper title, by Symposium, etc.). All Symposium participants will have free access to the MDR contents.

For further information, you may visit the conference website at <http://www.monubasin.com> or contact the conference organizing committee via email at conference2017@monubasin.com or monubasin2017@gmail.com.

Please feel free to forward this message to anyone who may be interested in this event.

We are looking forward to seeing you in Athens.

With kind regards,

Professor Fulvio Zezza,

President of the Symposium and Coordinator of the International Group on the Conservation of Monuments in the Mediterranean Basin (I.G.C.M.M.).

and

Professor Maria Kouli, NTU-Athens

Coordinator of the Organizing Committee

email. conference2017@monubasin.com
monubasin2017@gmail.com
web. <http://www.monubasin.com>

**2ND INTERNATIONAL CONFERENCE ON
ART & ARCHAEOLOGY 2016, ART AND
ARCHAEOLOGY STRENGTHENED BY
MEASUREMENT TECHNIQUES, DECEMBER
11-14, 2016, JERUSALEM, ISRAEL**

Scientific Program

Monday, December 12, 2016

09:00-11:00 Opening Session

Greetings

Advanced Imaging for the Study of Paintings

Austin Nevin, Italy

A Face from the Past: Multidisciplinary Forensic Reconstruction of an Ancient Egyptian Woman

Janet Davey, Jennifer Mann, Gavan Mitchell, Varsha Pilbrow, Ryan Jefferies, Australia

11:00-11:30 Coffee Break

11:30-13:30 Parallel Sessions

Session I: Minerals, Pigments, Dyes

Non Invasive XRF Examination of Paintings – Primings from the Years 1838-1938 - Novel Method Supporting Dating and Authentication of Modern Paintings

Mirosław Wachowiak, Grzegorz Trykowski, Poland

Non-invasive Analysis of the Wall-Paintings from the Domus Dei Bucrani (60 B.C.) in Ostia

David Strivay, Elodie Herens, Thomas Morard, Catherine Defeyt, Belgium

Combined Use of Optical Coherence Tomography and MacroXRF Imaging for Non-invasive Evaluation of Past Alterations in the 17th C. Dutch Painting

Magdalena Iwanicka, Piotr Targowski, Łukasz Ćwikliński, Poland

A New Archaeometric Method for the Fast Non-destructive Identification of Molluscan Purple in Textile Dyeings

Zvi C. Koren, Israel

Analysis of Pink Biopigmentation. Case study: the Refectory of Hurezi Monastery, Romania

Ioana Gomoiu, Roxana Cojoc, Simona Neagu, Madalin Enache, Dan Mohanu, Romania

Session II: Values and Ethics

Conservator's Examination in Brick Barracks on the Premises of the Former Auschwitz-Birkenau Concentration Camp – Project Presentation

Dorota Bialek-Kostecka, Anna Forczek-Sajdak, Poland

Conservation and Public Display of Cultural Heritage: Early Bronze Age Tel Yarmuth in the Contemporary Urban Landscape of Bet Shemesh

Gil Haklay, Omer Shalev, Amir Golani, Avi Mashiah, Israel

Authenticity vs. Accessibility. The Borders of Compromise in the Preservation of Auschwitz-Birkenau Site

Anna Lopuska, Poland

Changes in Social and Cultural Values and their Impact on conservation of Cultural Heritage Assets

Irit Amit-Cohen, Israel

The Internet of Invisible (Ancient) Things

Yuval Shafir, Yael Alef, Israel

13:30-14:30 Lunch & Posters

14:30-16:30 Parallel Sessions

Session III: Organics, Stone, Glass

Resin Analysis of the Yenikapı Byzantine-Era Shipwreck

Recep Karadag, Turkey

Four Hundred Meters Below Sea Level; Micromorphological, Chemical and Physical Characterization of Waterlogged Archaeological Wood Finds from the Dead Sea Shore

Asaf Oron, Nili Liphshitz, Gideon Hadas, Raphael Linker, Israel, Benjamin Held, Robert Blanchette, USA

Old Aqueducts and Sewage Systems of Santafé de Bogotá and Historical Archeology of the City

Monika Therrien, David Cohen, Mauricio Hoyos, Colombia

The Monumental Ensemble “The Heroes” Path” in Targu Jiu by Constantin Brancusi – Multiannual Monitoring Program

Roxana Radvan, Laurentiu Angheluta, Alexandru Chelmuș, Lucian Ratoiu, Romania

The Waldglas Project – Combining Instrumental Analyses for the Examination of Post-Excavation Corrosion on Archaeological Glass

Alexandra Jeberien, Olga Emgrund, Germany

Session IV: Iconography

The Real Thing? Polychromy Research Employed in Authenticity Studies of Etruscan Pinakes

Signe Skriver Hedegaard, Cecilie Brøns, Kaare Lund Rasmussen, Denmark

The Techniques and the Decorating of the Siberian Paleolithic Anthropomorphic Figurines

Pavel Volkov, Liudmila Lbova, Russia

Interpretations of Symbols in Rock Engravings and Stone Monuments

Uzi Avner, Israel

Gender , Representation, Status and Dress Code as Reflected on the Mosaics Pavement within the Historical-geographic Area of the Land of Israel towards the End of Late Antiquity

Aliza Steinberg, Israel

The Latest Results of the Archaeological Research of the Early Panticapaeum

Natalya Astashova, Vladimir Tolstikov, Olga Tugusheva, Olga Samar, Russia

Tuesday, December 13, 2016

09:00-11:00 Plenum

Synchrotron Based Techniques Reveal Writing and Ink Composition of Herculaneum Papyri

Vito Mocella, Italy

Material Analysis: Authentication or Forgery Detection?

Ira Rabin, Germany

11:00-11:30 Coffee Break

11:30-13:30 Parallel Sessions

Session V: Authentication: Metals

Keynote: Real or Fake? “Life” and “Death” of Unique Objects in Archaeology

Sariel Shalev, Israel

Two Nails 2400 Years Apart: Metallurgical Comparison of Copper Nails of the Ma, Agan Mikhael Ship and its Replica

Deborah Cvikel, Dana Ashkenazi, Alexandra Inberg, Igor Shteiman, Noam Iddan, Yaacov Kahanov, Israel

The Authenticity of a Lead Booklet/Codex from an Antiquity Dealer in Israel

Zvi Greenhut, Irina Segal, Gregory Leitus, Adi Eliyahu-Behar, Yuval Goren, Haggai Misgav, Amir Ganor, Israel

Analysis of Silver Denarii Minted in Poland in the X-XI Centuries

Julio M. Del Hoyo, Marta Matosz, Poland

Some Problems of Metal Artifacts Separation During Conservation Treatments

Helena Kupersmidt, Israel

Session VI: Pottery

Archaeological and Archaeometric Investigations of Islamic and Crusader Pottery in Israel. From: The POMEDOR Project "People, Pottery and Food in the Medieval Eastern Mediterranean

Yona Waksman, France, Edna Stern, Anastasia Shapiro, Israel, Alessandra Pecci, Spain

High-Fired Glazes of Ancient Chinese Ceramics

Weidong Li, P.R.China

The “Miletus Ware” Between Archaeological Excavations and Museum Collections: a Study of Provenance and Production Techniques by a Multi-analytical Approach

Jacques Burlot, Yona Waksman, Anne Bouquillon, Ludovic Bellot-Gurlet, Charlotte Maury, France

Contextualization of Zoomorphic figurines of the Neolithic of the Southern Levant

Estelle Orrelle, Liora Kolska Horwitz, Israel

The Blues of Glazed-Brick Reliefs of The Ishtar Gate and the Processional Way of Babylon: Compositional Considerations and Provenance

Alexandra Rodler, Signe Skriver Hedegaard, Cecilie Brøns, Denmark, Sabine Klein, Germany

13:30-14:30 Lunch & Posters

14:30-16:30 Session

Session VII: Authentication: Manuscripts

Virtual Unwrapping: Quantitative Distortion Analysis of Flattening Applied to the Scroll from Ein-Gedi

W. Brent Seales, C. Seth Parker, USA, Pnina Shor, Israel

Composition Analysis of Writing Materials in Geniza Fragments

Zina Cohen, France, Germany

Fluorescence-corrected Raman Spectroscopic Analysis of Collagen and Carbon Inks in Historical Parchments

Roman Schuetz, Peter Fratzl, Ira Rabin, Germany, Elisabetta Boaretto, Israel

Deciphering the Remains of Colonel Ilan Ramon's Crew Notebook, Recovered After the Loss of the Space Shuttle Columbia

Sharon Brown, Israel

Wednesday, December 14, 2016

09:00-11:00 Plenum

From Textile to Stucco: 14C Dating of Art

Mark Van Strydonck, Belgium

Ancient Mortars and Binders: Can the Walls Speak?

Gilberto Artioli, Italy

11:00-11:30 Coffee Break

11:30-13:30 Parallel Sessions

Session VIII: Digital Imaging and Sites

Keynote: Interdisciplinary Planning and Scientific Support in the Field of Rehabilitation of the Holy Aedicule of the Holy Sepulchre

Antonia Moropoulou, Greece

Survey With 3D Laser Scanner as a Tool for Knowledge: The Case of Piazza San Giovanni in Matera (Italy)

Antonello Pagliuca, Antonella Guida, Antonio Bixio, Italy

The Application of Photogrammetry in Archaeology in the Jerusalem District

Alexander Wiegmann, Israel

Uncovering the Ancient Silk Road from the Dunhuang Manuscripts by Using Satellite Remote Sensing and GIS

Lei Luo, Xinyuan Wang, P.R. China

Digital Photogrammetric Analysis of a Historic Building: The Arches Building in Lod, Israel, a Case Study

Michael Waas, Tsili Giladi, Israel

Session IX: Dating and Archaeometry

Keynote: Application of Fourier Transform Infrared Analysis for Prescreening for Radiocarbon Dating

Elisabetta Boaretto, Israel

Accelerator Mass Spectrometry Radiocarbon dating of a Byzantine tunic of the Egyptian Museum in Turin

Martina Ferrari, USA, Italy, Matilde Borla, Lucia Liccioli, Mariaelena Fedi, Paolo Gallo, Italy

The Uncertainty in Dating Ancient Objects with C14 Method. The Failure in Two Historical Cases: The Magdalen Papyrus and the Shroud

Giussepe Nardoni, Italy, Esmeralda Vataj, Albania

ECHO - An Interface for Cultural Heritage Experiments at ELETTRA

Franco Zanini, Alessandra Gianoncelli, Werner Jark, Andrea Lausi, Lucia Mancini, Luca Olivi, Jasper Plaisier, Maurizio Polentarutti, Barbara Rossi, Mirta Sibilis, Nicola Sodini, Lisa Vaccari, Italy

Deciphering the Whole Archaeological Record: the Value of On-Site Analyses

Elisabetta Boaretto, Israel

13:30-14:30 Lunch & Posters

14:30-16:30 Session

Session X: Digital Imaging of Objects

Keynote: First Temple Period Inscriptions: Imaging, Enhancement and Analysis

Arie Shaus, Israel

Reflectance Transformation Imaging and its Use in Negev Rock Art Research

Davida Eisenberg-Degen, Israel

Digital Analysis of Rock Art From Manot Cave

Avshalom Karasik, Omry Barzilai, Israel HersHKovitz, Ofer Marder, Israel

Reconstructing the Ancestral Inheritance of Costa Rica

Faye OlsGard, USA

3D-Scanning as a New Tool in the Research of Architectural Decoration

Asaf Ben Haim, Israel

Please visit the site: <http://www.isas.co.il/art-archeology2016/>

19TH INTERNATIONAL CONGRESS OF CLASSICAL ARCHAEOLOGY, 22 - 26 MAY 2018, BONN AND COLOGNE

On behalf of the organising committee (Prof. Martin Bentz and Prof. Michael Heinzelmann), please find at <http://www.aiac2018.de/> an announcement regarding the 19th International Congress of Classical Archaeology, which will be held from 22 - 26 May 2018 in Bonn and Cologne.

The congress, organized every five years by the Associazione Internazionale di Archeologia Classica (AIAC), provides the most important platform of exchange for all disciplines that deal with Greco-Roman civilization and their neighbouring cultures from the Aegean Bronze Age to the end of Late Antiquity.

The 19th International Congress of Classical Archaeology 2018 will focus on the primary theme "Archaeology and Economy in the Ancient World". In fact, economic aspects permeate all areas of public and private life in ancient societies, whether in urban development, in religion or art, in housing or in death.

Research on ancient economy has long played a significant role in ancient history. Increasingly in the last decades, awareness has grown in archaeology that especially the material culture of ancient societies offers excellent approaches for the study of structure, performance and dynamics of ancient economic systems and economic processes.

The objective of this congress will be to understand economy as a central element of classical societies and analyse its mutual interaction with current geographical, political, social, religious and cultural backgrounds. The theme of the congress is therefore addressed to all disciplines of classical archaeology and related sciences.

The call for panels is now open.

UNDERWATER 3D RECORDING AND MODELING SESSION AT 3D ARCH 2017 - DEADLINE REMINDER

Dear colleagues,

The **ISPRS WG II/9 Underwater Data Acquisition and Processing** working group has been established!

Soon a website will be available for us to share upcoming events, contacts and more. A become a member form will be available too.

Meanwhile, I would like to gently remind you that we are really looking forward to receiving your important contribution to **3D-ARCH 2017**, the deadline for abstract submission is approaching very quickly!

On behalf of all the officers and key personnel of the working group.

Best regards,

Fabio Menna

*** **UNDERWATER 3D RECORDING & MODELING** oral/poster session
*** within
*** **3D-ARCH 2017**
*** 7th Int. ISPRS/CIPA Workshop on "3D Virtual Reconstruction and Visualization of Complex Architectures"
*** **1-3 March 2017, Nafplio, Greece**
*** <http://www.3d-arch.org>
*** **Abstract submission: November 20th, 2016**

Dear colleagues and friends,

The 1st **UNDERWATER 3D RECORDING & MODELING** conference (<http://3dom.fbk.eu/files/underwater/index.html>) was held at the Villa Fondi di Sangro in Piano di Sorrento, Italy from April 16th to the 17th, 2015. The workshop was a great success, attended by 86 participants from 14 different countries.

Given the need to optimize the financial resources, we believe it is a great opportunity to promote a specific session about **UNDERWATER 3D RECORDING & MODELING** under the next 3D ARCH 2017 event. This will give everyone the opportunity to share their experiences about 3D reconstruction, modelling, accessing and understanding in subaquatic environments with a much wider community of experts of the sector.

The 7th International Workshop **3D ARCH 2017 - 3D Virtual Reconstruction and Visualization of Complex Architectures and Environments** will be held in Nafplio,

Greece, 1 -3 March 2017. We are going to reserve at least one session entirely dedicated to methods and techniques for underwater 3D recording and modeling. Therefore we want to invite you to submit an abstract **before 20 November 2016** and check out <http://www.3d-arch.org/> for farther information.

We look forward to meeting you in Naflio next year,

On behalf of the organizing committee,

best regards,

Fabio Menna

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STABLE ISOTOPE MASS SPECTROMETRY **USER GROUP (SIMSUG) MEETING,** **SCHEDULED FOR SUMMER 2017**

HERE ARE THE FIRST DETAILS FOR THE NEXT STABLE ISOTOPE MASS SPECTROMETRY USER GROUP (SIMSUG) MEETING, SCHEDULED FOR SUMMER 2017.

The provisional dates for the meeting are 2 days between 5th-7th July.

Please register your interest with us by replying to mjl@bgs.ac.uk.

The meeting will be organised by the Stable Isotope Facility at the British Geological Survey, Keyworth, Nottingham.

SIMSUG 2017 aims to be a stable isotope user group meeting that provides a dynamic forum for discussing state of the art approaches, methodologies and new applications in stable isotope research (geology, palaeoclimate, ecology and archaeology etc) and mass spectrometry.

Presentations by early career researchers, including PhD students are particularly welcome and keynote lectures will be interspersed throughout the presentations. A call for presentations will come later this year, once dates are finalised.

We look forward to seeing you at SIMSUG 2017, hope you can make it.

Best wishes,

Mel and the Stable Isotope Team

PS PLEASE FORWARD THIS EMAIL, A LONGER EMAIL LIST WILL FOLLOW ONCE DATES ARE CONFIRMED.

Dr Tamsin O'Connell
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2017 UK ARCHAEOLOGICAL SCIENCE CONFERENCE, UCL'S CENTRAL LONDON CAMPUS, 5-8 APRIL 2017

UCL's Institute of Archaeology is proud to be hosting the **2017 UK Archaeological Science conference**. The conference will take place within UCL's central London campus from the **5-8 April 2017**.

UKAS is a biennial international conference which aims to bring together researchers from all areas of archaeological science. The conference attracts scientists with expertise in a wide range of analytical techniques including biomolecular and ancient DNA analysis, stable isotopes, mineralogy and metallurgy, archaeobotany, conservation and heritage science, residue analysis, geoarchaeology, and computational modelling.

Research themes covered include mobility, migration and cultural exchange, plant-animal-human relationships, material culture and technologies, climate and environment, subsistence and diet, heritage management, and the application of archaeological science in commercial archaeology.

Contact details

Website: <https://www.ucl.ac.uk/archaeology/calendar/conferences/ukas2017>

To stay up to date with the latest news and announcements join the conference mailing list by sending a blank email to ukas2017-news-subscribe@ucl.ac.uk

You can follow us on Twitter: [@UKAS2017](https://twitter.com/UKAS2017).

The conference committee can also be reached at ukas2017@ucl.ac.uk

Abstract Submission and Sessions

- **Abstract submission is now open**

Key Dates

- **Abstract submission is now open**
- **Early-bird registration is now open**
- Deadline for abstract submission: 31 December 2016
- Deadline for early-bird registration: 31 January 2017

Scientific Panel

Rhiannon Stevens, Ian Freestone, Marcos Martinon-Torres, Dorian Fuller, Carl Heron, Hazel Reade, Sophy Charlton, Manuel Arroyo-Kalin, Louise Martin, Marc Vander Linden, and Patrick Quinn.

ΘΕΣΕΙΣ ΕΡΓΑΣΙΑΣ/ΥΠΟΤΡΟΦΙΕΣ –
JOB VACANCIES/FELLOWSHIPS

PHD POSITIONS IN MICROARCHAEOLOGY
– RUTGERS UNIVERSITY

I am currently accepting applications for Ph.D. graduate students in the Department of Anthropology (Evolutionary Anthropology track), at Rutgers University. We offer graduate students a fully-funded package guaranteed for 4-years with the possibility of obtaining additional funding through teaching and university fellowships. Candidates with exceptional experience and GRE scores will be competitive for the Rutgers Presidential Fellowship.

Rutgers University has a strong program in Archaeology and in the Department of Anthropology we currently have three faculty members that specialize in different archaeological periods and sites in Europe, Middle East and Africa (Dr. Craig Feibel, Dr. Carmel Schrire and Dr. Dan Cabanes). We are presently developing two new laboratory facilities that will focus on Micro-archaeological research and will have the state of the art instrumentation and the flexibility to explore new analytical and experimental applications. I am especially interested in graduate students with backgrounds in Geology, Chemistry, Botany, Biology, Material Sciences, Anthropology or Archaeology that would like to apply phytoliths, FTIR, and other analytical techniques to study a wide range of subjects such as site formation processes, artifact preservation, human behavior, fire technology, plant domestication, or activity areas among others.

My research aims to understand the association between environment and human cognitive and cultural evolution. I investigate population, social, and economic changes using microarchaeological remains in two critical periods in human history: the transition from the Middle to Upper Paleolithic in Europe and the evolution of the urban centers in the Levant. However, students conducting research in other regions, periods or methods can be accepted provided that they propose an interesting research project in Microarchaeology. For further information regarding my research please see the department website (<http://anthro.rutgers.edu/fac/682-dan-cabanes>).

For students interested in applying to our program please contact me directly (Dan Cabanes; dan.cabanes@rutgers.edu) and check our department website at (<http://anthro.rutgers.edu/graduate-program>).

Applications for admission in the Fall of 2017 are due Jan 9, 2017.

DURHAM LEVERHULME DOCTORAL SCHOLARSHIPS 2017-18

Durham University (UK) is one of 14 institutions awarded funding by The Leverhulme Trust within the new Doctoral Scholarships Award Scheme.

The 2017 competition is now open to applicants.
Completed applications must be received by 20 January 2017.

About the Scholarships

Durham University is proud to offer 6 PhD scholarships covering 36-months of fees, an RCUK-rate stipend (currently £14,296 per annum), research training and a three-month placement. Durham Leverhulme Doctoral Studentships are open to applicants from any discipline with an outstanding academic record and a clear commitment to and aptitude for interdisciplinary study. Applicants must have a strong interest in visual culture, visual phenomena, the nature of vision, visual theories and methods, and the significance of images and objects.

The Scholarships in Visual Culture build upon Durham's international excellence and strategic investment in the study of vision and perception, analysis of the social significance of images and ways of seeing, and attentive interpretation of a range of visual objects. The programme offers a new form of interdisciplinary doctoral training in visual culture.

We welcome applications from graduates in the arts and humanities, social sciences, natural sciences and life sciences who wish to pursue a PhD in visual science or visual culture.

How to Apply

Students for whom visual culture generously defined is integral to their research may apply to any of the <https://www.dur.ac.uk/departments/>. Successful applicants will be assigned an interdisciplinary supervisory team. We expect all Visual Culture PhD students to participate fully in planned activities, including an annual doctoral Summer School in July.

The application process for the Programme is:

1. Formal applications to the University and to the Programme
2. Selection day for shortlisted candidates, which will be held in Durham in March 2017. Travel expenses (within the UK) will be provided for those invited to attend.

Email: <mailto:cvac@durham.ac.uk>

APPLY <https://www.dur.ac.uk/cvac/>

ΑΝΑΚΟΙΝΩΣΕΙΣ - ANNOUNCEMENTS

POSTGRADUATE COURSE IN PREHISTORIC, GREEK AND ROMAN POTTERY: AN INTENSIVE PRIMER FOR THE STUDY OF POTTERY IN GREECE, 1ST - 14TH APRIL 2017

Pottery is central to the study of archaeology in the Mediterranean. As the most numerous finds from survey and excavation, ceramics not only provide our main chronological frameworks but also direct insights into a range of issues from ancient economies to questions of identity and agency. A working knowledge of ceramics is essential for anyone considering field-work in Greece, and the ability to critically assess publications and debates about pottery is vital to an understanding of practically any issue in Mediterranean archaeology.

This intensive course gives participants a unique opportunity to gain hands-on experience with one of the major pottery sequences in Greece, guided by leading specialists in the field. Based at the British School's Study Centre at Knossos, it makes use of the rich holdings of the Stratigraphic Museum which include material from across the Mediterranean in all periods from the Neolithic to Late Roman. Strewing and examining key pottery groups will allow participants to learn the key points of identification and major debates for each period. Essential skills, like drawing and macroscopic fabric analysis, are taught in supporting workshops, and a series of lectures will introduce themes, problems and methods in the study and publication of ceramics. Towards the end, each participant has the opportunity to undertake a case study project.

The course also comprises field classes to abandoned pottery workshops of the late 19th century, potting villages, visits to important Bronze Age, Classical, Hellenistic and Roman archaeological sites, along with the Heraklion Archaeological Museum and the Museum of Cretan Ethnology. Local potters, specializing in traditional techniques, provide practical experience of all stages of pottery production.

The course coordinator is Dr Kostis S. Christakis (The Knossos Curator) and instructors are Prof. Todd Whitelaw (UCL Institute of Archaeology), Dr Colin Macdonald (British School at Athens), Dr Conor Trainor (University of Warwick), Mr Antonio Bianco (University of Crete), and Ms Denitsa Nenova (UCL Institute of Archaeology) with contributions by Dr Lisa M. Bendall (University of Oxford), Dr Noémi Müller (Scientific Research Officer, Fitch Laboratory), Dr John Gait (Williams Fellow in Ceramic Petrology, Fitch Laboratory), Dr Emmanuella Apostolaki (University of Athens), Dr Giorgos Rethemiotakis (Former Director of the Heraklion Archaeological Museum), Dr Georgia Flouda (Curator of the Heraklion Archaeological Museum), and Ms Eirini Galli (Curator of the Heraklion Archaeological Museum).

The course is primarily intended for postgraduate students wishing to acquire or strengthen vital archaeological skills, but applications from late stage undergraduates

with a strong intention to continue their studies will also be considered. The course fee of £750 includes tuition, teaching materials, room and board (shared accommodation in double rooms with breakfast and some lunch) at the British School's Study Centre at Knossos, fieldtrip travel expenses, 24-hour access to the library, and BSA membership. Travel to and from Heraklion is the sole responsibility of the course participant.

Students are recommended to apply to their universities for assistance with the fees. A very limited number of bursaries may be available from the BSA for those who would be otherwise unable to attend. Places are limited to 12 participants.

Application forms can be downloaded from the British School website (www.bsa.ac.uk). Completed application forms and an academic reference letter (it is the applicant's responsibility to ensure that her/his reference is sent) should be emailed to the Knossos Curator Dr Kostis S. Christakis **by 15th February 2017** (knossoscurator@bsa.ac.uk). For further information contact the course coordinator Dr Kostis S. Christakis (knossoscurator@bsa.ac.uk).

Day	Morning Session (9.00am-13.00pm)	Afternoon Session (14.30pm-16.30pm)	Afternoon Session (17.00pm-18.00pm)
01/04 Saturday	Arrival and orientation	Introduction to the course	free
02/04 Sunday	Visit to the Heraklion Archaeological Museum	Neolithic-Middle Minoan IA (Prof. T. Whitelaw)	Prof. T. Whitelaw lecture
03/04 Monday	Field class at the potting village of Margarites		
04/04 Tuesday	Middle Minoan IB-Middle Minoan III (Dr C. Macdonald)	Drawing (Ms D. Nenova)	Dr E. Apostolaki lecture
05/04 Wednesday	Middle Minoan III-Late Minoan I (Dr C. Macdonald)	Drawing (Ms D. Nenova)	free
06/04 Thursday	Late Minoan II -Late Minoan IIIC (Dr C. Macdonald)	Quantification and statistical analyses (Prof. T. Whitelaw)	Dr K. S. Christakis lecture
07/04 Friday	Sub-Minoan-Orientalizing (Mr A. Bianco)	Analyzing an assemblage (Prof. T. Whitelaw and Dr K. S. Christakis)	free
08/04 Saturday	Field class at the potting village of Thraspsano and visit to the site of Galatas and the Lasithi Plateau		
09/04 Sunday	Excursion in the Mesara area (Gortys, Phaistos, Vori)		
10/04 Monday	Archaic -Classical- Hellenistic (Dr C. Trainor)	Survey Pottery (Prof. T. Whitelaw)	free
11/04 Tuesday	Late Hellenistic -Early Roman (Dr C. Trainor)	Imperial and Late Roman (Dr C. Trainor)	Dr L. M. Bendall lecture
12/04 Wednesday	Introduction to Scientific Analyses (Dr N. S. Müller)	Macroscopic examination (Dr J. Gait)	free
13/04 Thursday	Project	Project	free
14/04 Friday	Project	Free	free

EXCURSIONS

Heraklion Archaeological Museum

9.00am: Departure from Knossos.

9.30am-13.00pm: Heraklion Archaeological Museum.

Short lectures (about 20 minutes) by Ms E. Galli on Neolithic and Prepalatial Crete; Dr G. Rethemiotakis on Minoan religion and frescoes; and Dr G. Flouda on Linear A and B administration.

Field class to the potting village of Margarites

8.00am: Departure from Knossos.

9.30am: Arrival at Margarites.

10.00am: Clay collection from an area 1km from the village.

11.00am-13.00pm: Clay preparation in the open-air workshop of a local potter and visit to the abandoned pottery workshops (19th century) of Margarites.

13.00pm-14.30pm: Lunch break in a local taverna (or picnic, if the weather conditions are good, in the valley of Margarites, with a short lecture on Cretan flora).

14.30pm-15.00pm: Walk through the village of Margarites with a discussion of Cretan and Venetian architecture.

15.00pm-17.00pm (or 15.00pm-18.00pm): Working with clay in the workshop of a local potter.

18.00pm: Opening the firing kiln (with BBQ; all to bring a side dish/bottle).

20.30 pm: Return to Heraklion.

Thrapsano-Galatas-Lasithi

9.00am-10.00am: Lecture on the potting centres of pre-industrial Crete (Dr K. S. Christakis).

10.00am: Departure from Knossos.

11.00am-12.00am: Thrapsano: Visit the workshop of a potter (special emphasis will be given to the production of large storage jars).

12.00am-15.00pm: Visit to Galatas (and lunch break).

15.00pm-18.00pm: The Lasithi plateau and return to Heraklion.

Excursion to the Mesara

9.00am: Departure from Heraklion.

10.30am-12.00am: Visit to the Roman city of Gortys.

12.00am -13.30pm: Visit to Phaistos.

13.30pm -14.00pm: Lunch break at the traditional village of Vori.

14.00pm -16.00pm: Visit to the Museum of Cretan Ethnology at Vori (with major emphasis on the pottery collection).

16.00pm-17.30pm: Return to Heraklion.

LECTURES

Prof. Todd Whitelaw

Ethnoarchaeological studies of pottery: production, distribution and consumption; functional and stylistic variation.

Dr Emmanuella Apostolaki

Analyzing a domestic pottery assemblage: the case of House 2 at Galatas, Pediada.

Dr Kostis S. Christakis

From storage containers to the economic organization of a prehistoric society.

Dr Lisa M. Bendall

Pottery and potters in the Mycenaean world.

STABLE ISOTOPE MIXING MODELS USING SIAR, MIXSIAR AND SIBER - STATS COURSES

Stable Isotope Mixing Models using SIAR, SIBER and MixSIAR (SIMM03) Delivered by Dr. Andrew Parnell and Dr. Andrew Jackson
<http://www.prstatistics.com/course/stable-isotope-mixing-models-using-r-simm03/>

This 4 day course will run from 28th -3rd March 2017 at Millport field centre, Isle of Cumbrae, Scotland (please note that although the field centre is on an island it is extremely easy and uncomplicated to reach by public transport from both within and outside the UK) (PLEASE NOTE THIS COURSE IS FOLLOWED BY 'NETWORK ANALYSIS OF ECOLOGICAL DATA USING R – this course concentrates a lot of food webs and therefore may also be of interest. A COMBINED COURSE PACKAGE IS AVAILABLE)

<http://www.prstatistics.com/course/network-analysis-ecologists-ntwa01/>

This course will cover the concepts, technical background and use of stable isotope mixing models (SIMMs) with a particular focus on running them in R. This course will cover the concepts, technical background and use of stable isotope mixing models (SIMMs) with a particular focus on running them in R. Recently SIMMs have become a very popular tool for quantifying food webs and thus the diet of predators and prey in an ecosystem.

Starting with only basic understanding of statistical models, we will cover the do's and don'ts of using SIMMs with a particular focus on the widely used package SIAR and the new, more advanced MixSIAR. Participants will be taught some of the advanced features of these packages, which will enable them to produce a richer class of output, and are encouraged to bring their own data sets and problems to study during the round-table discussions.

Course content is as follows

Tuesday 28th – Classes from 09:00 to 17:00 Basic concepts.

Module 1: Introduction; why use a SIMM?

Module 2: An introduction to bayesian statistics.

Module 3: Differences between regression models and SIMMs.

Practical: Revision on using R to load data, create plots and fit statistical models.

Round table discussion: Understanding the output from a Bayesian model.

Wednesday 1st – Classes from 09:00 to 17:00 Understanding and using SIAR.

Module 4: Do's and Don'ts of using SIAR.

Module 5: The statistical model behind SIAR.

Practical: Using SIAR for real-world data sets; reporting output; creating richer summaries and plots.

Round table discussion: Issues when using simple SIMMs.

Thursday 2nd – Classes from 09:00 to 17:00 SIBER and MixSIAR.

Module 6: Creating and understanding Stable Isotope Bayesian Ellipses (SIBER).

Module 7: What are the differences between SIAR and MixSIAR?

Practical: Using MixSIAR on real world data sets; benefits over SIAR.
Round table discussion: When to use which type of SIMM.

Friday 3rd – Classes from 09:00 to 17:00 Advanced SIMMs.
Module 8: Using MixSIAR for complex data sets: time series and mixed effects models.
Module 9: Source grouping: when and how?
Module 10: Building your own SIMM with JAGS.
Practical: Running advanced SIMMs with JAGS.
Round table discussion: Bring your own data set.

Please email any inquiries to oliverhooker@prstatistics.com or visit our website www.prstatistics.com

Please feel free to distribute this material anywhere you feel is suitable Upcoming courses - email for details oliverhooker@prstatistics.com

1. MODEL BASED MULTIVARIATE ANALYSIS OF ECOLOGICAL DATA USING R (January 2017)

<http://www.prstatistics.com/course/model-base-multivariate-analysis-of-abundance-data-using-r-mbm01/>

2. ADVANCED PYTHON FOR BIOLOGISTS (February 2017)

<http://www.prstatistics.com/course/advanced-python-biologists-apyb01/>

3. STABLE ISOTOPE MIXING MODELS USING SIAR, SIBER AND MIXSIAR USING R (February 2017)

<http://www.prstatistics.com/course/stable-isotope-mixing-models-using-r-simm03/>

4. NETWORK ANALYSIS FOR ECOLOGISTS USING R (March 2017)

<http://www.prstatistics.com/course/network-analysis-ecologists-ntwa01/>

5. ADVANCES IN MULTIVARIATE ANALYSIS OF SPATIAL ECOLOGICAL DATA (April 2017)

<http://www.prstatistics.com/course/advances-in-spatial-analysis-of-multivariate-ecological-data-theory-and-practice-mvsp02/>

6. INTRODUCTION TO STATISTICS AND R FOR BIOLOGISTS (April 2017)

<http://www.prstatistics.com/course/introduction-to-statistics-and-r-for-biologists-irfb02/>

7. ADVANCING IN STATISTICAL MODELLING USING R (April 2017)

<http://www.prstatistics.com/course/advancing-statistical-modelling-using-r-advr05/>

8. INTRODUCTION TO BAYESIAN HIERARCHICAL MODELLING (May 2017)

<http://www.prstatistics.com/course/introduction-to-bayesian-hierarchical-modelling-using-r-ibhm02/>

9. MULTIVARIATE ANALYSIS OF SPATIAL ECOLOGICAL DATA (June 2017)

10. GEOMETRIC MORPHOMETRICS USING R (June)

<http://www.prstatistics.com/course/geometric-morphometrics-using-r-gmmr01/>

11. BIOINFORMATICS FOR GENETICISTS AND BIOLOGISTS (July 2017)
<http://www.prstatistics.com/course/bioinformatics-for-geneticists-and-biologists-bigb02/>
12. INTRODUCTION TO METHODS FOR REMOTE SENSING (July 2017)
13. SPATIAL ANALYSIS OF ECOLOGICAL DATA USING R (August 2017)
<http://www.prstatistics.com/course/spatial-analysis-ecological-data-using-r-spae05/>
14. ECOLOGICAL NICHE MODELLING (October 2017)
15. GENETIC DATA ANALYSIS USING R (October TBC)
16. INTRODUCTION TO PYTHON FOR BIOLOGISTS (October TBC)
17. INTRODUCTION TO BIOINFORMATICS USING LINUX (October TBC)
18. LANDSCAPE (POPULATION) GENETIC DATA ANALYSIS USING R (November TBC)
19. PHYLOGENETIC DATA ANALYSIS USING R (November TBC)
20. APPLIED BAYESIAN MODELLING FOR ECOLOGISTS AND EPIDEMIOLOGISTS (November 2017)
21. ADVANCING IN STATISTICAL MODELLING USING R (December 2017)

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GRANTS: RAKOW GRANT FOR GLASS RESEARCH

The Corning Museum of Glass sponsors the Rakow Grant for Glass Research, which makes available one or more annual awards totaling up to \$25,000. The program is made possible through the generosity of the late Dr. and Mrs. Leonard S. Rakow, who were Fellows, friends, and benefactors of the Museum. The purpose of this grant is to foster scholarly research in the history of glass and glassmaking from antiquity until the mid-20th century, from anywhere in the world. Disciplines intersecting with glass research may include (and are not limited to) archaeology and anthropology, art history, conservation, and the history of science and technology.

Eligibility: Individuals and institutions may apply. There are no national residency requirements, and the results of the research may be reported in any language, but preference may be given to projects which will bring researchers to Corning, NY, to study the Museum's collections or to use the Rakow Research Library. Preference will be given to projects which will be completed with the funding available, rather than to projects which will only be advanced by this grant. Projects which are a portion of a larger program, and which are already being funded by others, are unlikely to receive the award. The judges are looking for a project which will lead to a finished product within the funding limits and whose research will bring the recipient to Corning. Other factors that can contribute to a successful application include originality of research questions and clarity of methodology.

Description: Grants may be used to cover travel, living expenses, or other expenditures necessary to conduct the research or to publish it. Awards will be based on the merit of the projects proposed, the nature and extent of the contributions to glass studies, and an evaluation of the ability of the applicant to accomplish the goals as stated. Applications will be considered only if typed in English on the prescribed grant application form on our website. Resubmissions of previously unsuccessful applications can be received. Please indicate if your application is a resubmission or a modification of a prior application, and in which year you last submitted your application.

How to Apply: Applications, which are reviewed by a Museum staff committee, must be received before February 1 of the year for which funding is requested (next deadline Tues January 31, 2017). Notification of the committee's decision will be sent by April 1. Please see our website for further details and guidelines and make your submission via our online form at <http://www.cmog.org/research/grant>

Questions? Contact <mailto:curatorial@cmog.org>.

ΝΕΕΣ ΕΚΔΟΣΕΙΣ – NEW PUBLICATIONS
POST-ERUPTIVE FLOODING OF SANTORINI
CALDERA AND IMPLICATIONS FOR
TSUNAMI GENERATION

Dear All,

This is an excellent new Nature article on the LBA Minoan eruption of Santorini. Just more of the already overwhelming evidence the great ~1613 BC eruption caused no major tsunami destruction in the Aegean.

"the NW strait was carved by inrushing of the sea into the newly collapsed caldera once the eruption was over. This therefore rules out caldera collapse as a major mechanism of tsunami generation associated with the LBA eruption."

["Post-eruptive flooding of Santorini caldera and implications for tsunami generation"](#)

P. Nomikou, T. H. Druitt, C. Hübscher, T. A. Mather, M. Paulatto, L. M. Kalnins, K. Kelfoun, D. Papanikolaou, K. Bejelou, D. Lampridou, D. M. Pyle, S. Carey, A. B. Watts, B. Weiß, & M. M. Parks

Kindly,

W. Sheppard Baird

[The "Sinking Atlantis" Tsunami Myth Debunked](#)

MYCENAEAN WALL PAINTING IN CONTEXT: NEW DISCOVERIES, OLD FINDS RECONSIDERED. ΜΕΛΕΤΗΜΑΤΑ 72

Hariclia Brecolaki, Jack L. Davis, Sharon R. Stocker (ed.), *Mycenaean Wall Painting in Context: New Discoveries, Old Finds Reconsidered. ΜΕΛΕΤΗΜΑΤΑ 72*. Athens: National Hellenic Research Foundation / Institute of Historical Research, 2015. Pp. 403. ISBN 9789609538343. €120.00.

Reviewed by Anne P. Chapin, Brevard College (chapin@brevard.edu)
[Authors and titles are listed at the end of the review.]

With a preface and 14 lavishly illustrated chapters, *Mycenaean Wall Painting in Context: New Discoveries, Old Finds Reconsidered* presents, as its title suggests, recent discoveries and current research on Mycenaean wall paintings excavated from both palatial and non-palatial contexts on the Greek mainland, specifically Mycenae, Tiryns, Argos, Iklaina, Pylos, Thebes, Orchomenos, and Gla. The volume publishes a workshop organized by the volume's editors, who, as outlined in the Preface, were motivated to undertake the project by their own continuing study of wall paintings from the Mycenaean palace at Pylos. This focus on previously unpublished material means that the material presented in this volume is new to scholarship, and thus highly significant for the study of ancient painting. The volume is clearly and consistently organized. Each chapter features a site plan marking find spots of wall paintings and includes written descriptions of archaeological and architectural contexts, observations on technical aspects of the paintings, stylistic and iconographic analysis, and discussions of possible meanings of the various compositions. With its systematic presentation of the archaeological material and the abundant large scale, full color photographs and drawings, this volume represents a major publication of Mycenaean painting.

The contents are organized geographically into four sections: Mycenae, Tiryns/Argos, Messenia, and Boiotia. This is preceded by introductory chapters intended to establish the conceptual and geographical contexts of Mycenaean painting, beginning with John Bennet's discussion (Ch. 1) of problems scholars face today when seeking to contextualize Mycenaean paintings within their specific cultural and social milieus. For Bennet, "behind the wall" studies of painting technology that recognize chaînes opératoires complement "on the wall" investigation of representation and signification. Bennet's essay emphasizes the importance of Mycenaean paintings not only as "'windows on the Mycenaean world,' but [also] as some of the most complex products that draw in multiple aspects of practice within that world, helping us to reach a richer understanding of what it meant to be 'Mycenaean'" (33).

Andreas Vlachopoulos's investigation of Mycenaean elements in Cycladic painting (Ch. 2) challenges commonplace assumptions of monolithic ethnic identities ("Minoan," "Cycladic," and "Mycenaean") by awarding Mycenaeans active rather than passive roles in the creation and maintenance of visual and material culture from the beginning of the Late Bronze (LB) Age. Vlachopoulos argues that Theran artists made dynamic contributions to the formation of Aegean koine art, first in ceramic painting during the

Middle Cycladic (MC) period and later in wall paintings of Late Cycladic (LC) I, contemporary with Neopalatial Crete. For Vlachopoulos there is not one correct answer to the question of ethnic identity; rather, the question itself needs rephrasing. This essay is valuable for its thoughtful discussion of recent trends in scholarship and for its fine illustrations of new finds from Akrotiri, particularly MC pictorial vases found in excavations for the new site shelter and a frieze depicting life-size boar's tusk helmets—a motif often associated with Mycenaean art.

Santo Privitera's contribution (Ch. 3) offers a valuable summary of recent investigations into the Late Minoan (LM) III paintings of Ayia Triada, Crete, excavated early in the twentieth century. Careful archival work identifies find spots of plaster deposits and their chronology. Of particular interest is the restoration of the late LM IIIA2 Great Procession and the Woman and an Altar to an extensively painted hall of ceremonial and cultic character, Room A in Casa VAP. The evidence from Ayia Triada suggests the presence of a local painting workshop—a "Messara school"—as early as LM IIIA1, one that continued to be active after the fall of Knossos, likely in LM IIIA2.

The section on paintings from Mycenae opens with Heleni Palaiologou's study of a painted plaster female figurine excavated from a chamber tomb at Asprochoma, north of the acropolis (Ch. 4). This is the only chapter which does not deal directly with wall paintings, yet the techniques used to shape and decorate the plaster figure draw from relief fresco as well as techniques of clay modeling and ivory-, bone- and wood-carving. Details of style and iconography reveal affinities with Minoan art, but comparisons with the famous painted plaster head from Mycenae, the female statues from Kea, and Mycenaean terracotta figurines suggest it was produced by a Mycenaean palatial workshop in Late Helladic (LH) IIIA and probably represented a deity.

Kim Shelton's overview of LH IIIA frescoes excavated in 2006-2008 from the LH IIIA Petsas House at Mycenae returns the volume's focus to wall painting (Ch. 5). While conservation and study of these paintings continue, recognizable motifs include splash patterns, tricurved arches, rockwork, and argonauts. The presence of high-quality paintings in non-palatial contexts is notable. Similarly, figurative paintings decorated the LH IIIB1 West House at Mycenae, excavated in the 1950s but only recently the subject of study by Iphiyenia Tournavitou (Ch. 6). Fragments depict male hunters carrying spears, hunting dogs, vegetation (plants and trees), and horse-drawn chariots which share stylistic and iconographic similarities with the Boar Hunt Fresco from Tiryns. A fragmentary ritual scene with a female figure and two heraldic animals (a possible stag and a mystery creature) is new to Mycenaean iconography. Themes featuring sport and ritual, previously believed to have been restricted to palaces, are now known to have decorated nonpalatial buildings; visually, they link the occupants of the West House with the central authority of the palace at Mycenae.

The third section features chapters on paintings from Tiryns and Argos. Alkestis Papadimitriou, Ulrich Thaler and Joseph Maran present a fragmentary but important new LH IIIB composition excavated in 1999 from secondary contexts in the Western Staircase of the citadel at Tiryns (Ch. 7). As restored, the painting features "Pomegranate Bearers": small female figures (statuettes or children?) grasping pomegranate branches, each held by a larger female personage and accompanied by processional escorts. The authors review evidence supporting every detail of the composition's restoration before discussing its intriguing iconography. Ultimately, interpretation hinges on whether one

understands the pomegranate bearers as living girls or effigies, and since neither identification can be made with certainty, the authors leave the question open.

Paintings discovered in a megaron-like building dated to LH IIIA2, uncovered in rescue excavations in Argos during 1971-1973, form the subject of Ch. 8, co-authored by Iphiyenia Tournavitou and Hariclia Brecolouki. A fragment preserving the lower legs of three walking figures will be of interest to scholars investigating the Aegean color convention, according to which red-painted skin signifies male gender whereas white skin identifies female. In this fragment, the leading figure's left leg is rendered in red outline, the central figure has solid red legs, and the third figure has a white leg (but no skirt or robe). Other fragments from the site preserve a twisting charioteer with naturalistically rendered musculature, a long-necked bird interacting with a hissing snake, two over-life-size yellow scorpions, and a seascape with octopuses. These extraordinary additions to the Mycenaean corpus make the fragments depicting female figures—even one carrying a caprid upside-down—seem ordinary.

The next three essays present paintings from Messenia, beginning with Michael Cosmopoulos's overview of painted plasters discovered in 2009 at Iklaina, near Pylos (Ch. 9). Found in the LH IIB-III A1 Cyclopean Terrace Building, these paintings are among the earliest to survive from Mycenaean Greece. Of the 1181 excavated fragments, however, only 60 preserve recognizable patterns, the most interesting of which belong to a naval scene and depict part of a crescent-shaped ship decorated with spirals and occupied by three figures (two oarsmen and a man seated in a cabin), and two dolphins swimming beside vessel. Two additional fragments preserve parts of female figures and may belong to a procession fresco. The Iklaina paintings are significant for their adaptations of Minoan and Cycladic prototypes and for their embrace of artistic style associated with later Mycenaean painting (e.g., highly stylized dolphins). Cosmopoulos suggests that artists working in Messenia likely played significant roles in establishing the Mycenaean artistic idiom and shares the view that mainland artists were first exposed to painting in the Cyclades (especially Thera, Kea).

The two following essays focus on wall fragments from the palace at Pylos. In Ch. 10, Hariclia Brecolouki, Sharon Stocker, Jack Davis, and Emily Egan offer a preliminary study and restoration of a LH IIIB naval scene excavated in 1953, now restorable to the northwest wall of Hall 64. Three overlapping, crescent-shaped ships sail on a fish-filled purple sea, propelled by oarsmen, framed above and below by a black-and-white checkerboard pattern; a fourth ship is distinguished by its hull's decoration with argonauts, and probably belongs to a separate composition. Unlike many well-known Mycenaean paintings painted in blue, red and yellow (in addition to black and white), this scene's color palette was restricted to iron-based ochres (for the ships) and murex purple mixed with grains of Egyptian blue (for the sea). These pigments were applied a secco to dry plaster using egg and vegetable gum binders. For the authors, the Naval Scene underscores Pylian state interest in maritime affairs, already evidenced by Linear B tablets from the site.

Egan and Brecolouki's co-authored essay (Ch. 11) takes a closer look at painted argonauts, which appear on 53 wall fragments from the Pylos palace. A good deal of confusion surrounds the argonaut motif, since it is commonly misidentified as the nautilus, a different marine species. The authors argue convincingly that argonauts are not merely decorative in meaning but emblematic of seafaring and naval strength and

perhaps symbolic of political and religious power. Here, photographs of the actual animals—argonaut and nautilus—would have enhanced this study, as the painted creatures are heavily stylized and non-naturalistic in appearance.

The fourth and final section of the volume features paintings from Boiotia. Vassilis Aravantinos and Ioannis Fappas present recent discoveries of paintings from Thebes, where paintings were found in ten locations across the fortified acropolis (Ch. 12). Motifs include spiral friezes and birds in landscape settings. The Treasury Room of the Kadmeia, in contexts datable to the mid-13th century, produced border motifs (rosettes, spirals, and imitation stonework), spiral designs incorporating papyrus sprays, and fragments preserving string lines and an incised compass-drawn circle. Theodoros Spyropoulos's contribution on paintings from the palace at Orchomenos, excavated by the author in the 1970s and 1980s (Ch. 13), presents fragments from an extensive Boar Hunt Fresco; similarities with the well known Boar Hunt composition from Tiryns point to the existence of travelling artists. Other painting fragments seem religious in content and are identified as male worshippers with raised arms and palm trees in a fenced temenos populated by deer; these motifs are linked rather daringly with the later temenos of the Charites which possibly gave Orchomenos its name (364-365). The plume of a griffin and the head of a young "prince" with a possible ivory throne are rare examples of wall paintings described in the text but not illustrated in this volume. Lastly, Christos Boulotis offers an updated analysis and restoration of a fragmentary Dolphin Frieze found at Gla outside Room N1 in the east wing of the South Enclosure, together with information on three wall painting fragments from the same deposit, identifiable as large-scale argonauts (Ch. 14).

The present book, richly illustrated, offers up-to-date insights into many new discoveries and research of Mycenaean wall painting. Among its many important contributions, a few points deserve repeated emphasis. First, fragments from Iklaina, Argos, and Mycenae offer new information on the earlier phases of Mycenaean painting and help fill chronological gaps in the study of painting. Second, the new finds underscore that fact that Mycenaean painting was widespread as an art form and not restricted to the palaces. Third, naval scenes and marine themes—largely unrecognized in earlier studies of Mycenaean painting—now seem to appear everywhere, as evidenced by new compositions from Argos, Iklaina, Gla, Mycenae and Pylos. In sum, this volume represents a major effort to bring together new work on Mycenaean painting, in a format that is easily accessible to a broad audience and lavishly illustrated with large format, high quality color images. It would be a welcome addition to any prehistorian's library.

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Please visit the site: <http://bmcr.brynmaur.edu/2016/2016-11-09.html>

JOURNAL OF GLASS STUDIES (V. 58)

The Corning Museum of Glass is pleased to announce the publication of the 2016 volume of the Journal of Glass Studies (v. 58).

The Journal is an annual publication of the Corning Museum of Glass that contains articles and notes of a scholarly nature on the art, history, and technology of glass, dating from ancient times up to the mid-20th century.

Contents and article abstracts are available at: <http://www.cmog.org/publication/journal-glass-studies-volume-58>

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The print edition of the Journal of Glass Studies is available for purchase from The Corning Museum of Glass Web site: <http://shops.cmog.org/bookshop/journal-of-glass-studies-vol-58-2016.html>.

Articles from the Journal of Glass Studies can be accessed online via EBSCO and JSTOR subscriptions (2015-16 coming soon on JSTOR).

For more information and for submissions guidelines, please visit www.cmog.org/research/publications/journal-glass-studies.

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FOOD, IDENTITY AND CROSS-CULTURAL EXCHANGE IN THE ANCIENT WORLD. COLLECTION LATOMUS 354

Bryn Mawr Classical Review 2016.11.19

Wim Broekaert, Robin Nadeau, John Wilkins (ed.), Food, Identity and Cross-Cultural Exchange in the Ancient World. Collection Latomus 354. Brussels: Éditions Latomus, 2016. Pp. 106. ISBN 9789042933040. €22.00.

Reviewed by Saskia T. Roselaar (saskiaroselaar@gmail.com) [Authors and titles are listed at the end of the review.]

It is not clear whether the articles collected in this volume are the proceedings of a conference, or whether it was conceived as a thematic volume. If the latter, it is a pity that the volume is quite short, because it raises a number of interesting debates. The topic would certainly benefit from more research. As the editors explain in the introduction (p. 7), ‘for a long time, food and cuisine were dealt with in an antiquarian fashion cataloguing data and customs rather than analysing them with a historical focus’. Recently, food has received more attention in the context of cultural exchange. Changes in food consumption can show how a culture is in ‘continual transformation and adapts to internal and external forces’ (p. 7). The editors explain how food is an essential expression of identity, but identity is not static and the result of a dynamic process. Therefore, in studies of ancient identity, food should certainly not be neglected. Food culture ‘negotiates between tradition and change’ (p. 9), but foreign elements can be included in the diet fairly easily. However, they must fit people’s needs and experience: ‘to be fully integrated, they need to be socially valid’ (p. 9).

This means that paradigms such as Hellenisation and Romanisation cannot be used to discuss food and identity in antiquity. Romanisation can be used to describe changes in administration, but not in culture. More useful concepts are connectivity between different cultures and communities, and globalisation, which explains the cultural changes caused by this connectivity. Networking is another useful approach, since it focuses on ‘zones of transition, communication, exchanges and interaction’ (p. 11). The recent concept of ‘transferts culturels’, introduced by Espagne and Werner¹ is applied by the authors of this volume: ‘it implies that a foreign element can be understood, applied and reinterpreted in a welcoming culture within existing native categories’; it is ‘neutral, conveying no presupposed ideology’. This is an important point: adopting elements of other cultures does not mean a loss of identity, but a useful addition to an existing culture. To be incorporated, a new element should serve some purpose, whether practical or ideological, in the receiving society. From this premise, the authors of the papers in this volume explore various cultural exchanges with regard to food in the ancient world.

Nadeau discusses the history of the chicken in the Greek world. Chicken were often called ‘Persian bird’ in Greek, leading to the long-standing idea that chicken were introduced in Greece after the Persian wars; furthermore, it was believed that chicken never formed an important part of the Greek diet. However, Nadeau argues, based on archaeological evidence, that chicken were already common in some parts of the Greek

world around 3000 BC. Already in the archaic period, chicken was common in art and literature. The name ‘Persian bird’, Nadeau argues, was derived from the strutting behaviour of the rooster, which was compared to the manners of the Persian kings. Thus, the chicken was used as a symbol to establish the identity of the ‘other’, in this case the Persians.

In the next article, Botte investigates tuna exploitation in Greek Sicily. It was assumed that tuna was first exploited in the western part of the island by the Phoenicians, and that this technology was adopted by Greeks living in the eastern part. Botte concludes that tuna workshops appeared a few decades after those in Punic Cadiz, suggesting influence from the Iberian peninsula. However, it cannot be determined whether the Punic or Greek sites on Sicily appeared earlier. Moreover, Greek sites made use of circular vats for salting fish, indicating an independent technological innovation. Unfortunately, this paper does not explicitly address issues of identity, but it seems clear that food production technology was a cultural element that could profitably be adopted and adapted by others, who used it for their own purposes—in this case the export of tuna from Greek Sicily on a commercial scale.

In scholarship, Crete is synonymous with wine production. However, this picture does not adequately address the variety of purposes for which wine could be used, nor the identity that wine played in Crete’s identity. As Gallimore argues, Cretan amphorae in the first to third centuries AD were highly standardized, which enabled the end user to identify a product as Cretan. This shows that Crete’s identity was closely tied to wine. However, this wine was not highly rated as a beverage, but especially intended for cooking and medical use—Crete was also famous for medicinal herbs. This shows that the Cretan identity and the role played by wine was more complex than is usually assumed.

The only French-language contribution to this volume studies the way foreign foods were perceived in second-century BC Rome. In this period, several *leges sumptuariae* were issued, which limited the amount of money to be spent on food for specific occasions. Some laws even forbade the use of ‘foreign wine’. As Passet argues, in the second century BC a stronger idea of the ‘other’ appeared in Rome, and Romans felt it more necessary to protect their cultural identity. This manifested itself in a rejection of Greek culture, which was seen as overly luxurious. There was also an economic aspect to these laws: the possibilities for social display created by the availability of expensive new foods could easily lead the aristocracy to ruin itself. Instead, the Roman state wished to promote a simple life, based on local agricultural products. This contribution shows the tensions that new foods could cause; but despite these laws and the ideology behind them, foreign foods were quickly adopted in Rome and Italy, showing that they addressed a need felt by the Roman elite.

The longest contribution to this volume is by Broekaert, who investigates the role played by fish sauces in the identity of soldiers and locals among the north-western limes. This paper engages the most with the theoretical concepts behind this volume, which makes it a good example of how theory should be applied to specific case studies. Broekaert argues, against long-held ideas, that the presence of the Roman army did not radically change local food habits. Instead, locals adopted elements of Roman food that appealed to them. A specific ‘military diet’ was adopted by soldiers, in order to create a common identity. At first this was catered for by imports from the Mediterranean area, but soon

local producers took over the production of fish sauces and other foods, which they sold to the army. Even when the army left the area, fish sauces continued to be produced locally, attesting to cultural exchange with Rome.

The next paper, by Wilkins, moves to Galen's ideas on food as medicine. In general, he believed that humans remained in good health by adhering to their customs and doing what was natural. However, most plants prescribed as medicine by Galen were not native to the Greek world, but this was exactly the point: a sick person needed extreme measures to restore his health. After his recovery, he should return to normal food, native to his region, which best fit his body's needs. Despite the author's sudden exhortation to return to Galen's health regime (p. 92), this paper makes interesting points regarding the integration of foods from far-flung regions into the Roman Empire.

The volume closes with Smith's article on the role of food in creating early Christian communities. Early Christian meetings took place in private houses, where the Greek symposion-model, of a dinner accompanied by philosophical discussion, was followed. At first, Jews were anxious to attend such dinners, as they were not sure whether they should adhere to Jewish food regulations. Paul's letters exhort non-Jewish Christians to cater for Jews, since hospitality to strangers was a central tenet in the classical world. Thus, the consumption of food could serve as a means to unite in one religion people from different backgrounds.

In short, this volume discusses a wide variety of issues related to food and identity, from production and consumption to perceptions of food, in a wide chronological period. This range makes it sometimes hard to see how they relate to the common theme, especially as not all contributions return to the interesting theoretical comments made in the introduction. Interesting concepts such as networks, connectivity and transfers culturally hardly appear at all. Nor is there a general conclusion, which could have tied the conclusions of the individual papers together and connected them to the general theme. Still, the volume raises many interesting points, such as the close connection between food and identity, and the ease with which food habits could be adopted by other societies, which then adapted them for their own purposes. The subject would certainly benefit from wider exploration, and this volume has made a good start. It is to be hoped that the editors and contributors will continue their investigations in the future.

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1. M. Espagne and M. Werner, 'Deutsch-französischer Kultur-Transfer im 18. und 19. Jahrhundert', *Francia. Forschungen zur westeuropäischen Geschichte* 14, 1985, 502-510.

Please visit the site: <http://bmcr.brynmawr.edu/2016/2016-11-19.html>

ΕΙΔΗΣΕΙΣ - NEWS RELEASE

CRYPT BELIEVED TO BE JESUS' TOMB OPENED FOR FIRST TIME IN CENTURIES, BY PETER BAKER

The only mystical power visible was the burning light from seven tapered candles. And yet for ages, the tomb that sits at the center of history has captured the imaginations of millions around the world.

For centuries, no one looked inside - until last week, when a crew of specialists opened the simple tomb in Jerusalem's Old City and found the limestone burial bed where tradition says the body of Jesus Christ lay after his crucifixion and before his resurrection.

"We saw where Jesus Christ was laid down," Father Isidoros Fakitsas, the superior of the Greek Orthodox Patriarchate, told me. "Before, nobody has." Or at least nobody alive today. "We have the history, the tradition. Now we saw with our own eyes the actual burial place of Jesus Christ."

For 60 hours, they collected samples, took photographs and reinforced the tomb before resealing it, perhaps for centuries to come. By the time I visited one dark night this week, the tomb had already been closed again. In the end, just about 50 or so priests, monks, scientists and workers had peered inside, and they seem likely to be the only ones on the planet who will do so in our lifetimes.

The tomb believed to be Christ's was opened as part of a complex renovation of the shrine that was built around it long after his death in what is today known as the Church of the Holy Sepulcher, perhaps Christianity's holiest site. Scholars hope to study what they found to determine more about the event that spawned one of the world's great religions.

Pilgrims have been flocking to the church for generations, sometimes as many as 5,000 a day. To get to the tomb, many walk along the Via Dolorosa, the winding path through Jerusalem's Old City where Jesus is said to have been forced to bear his cross. Vendors like those lining the way today would not have been there then, but otherwise not much has changed.

The church was first built where the tomb was discovered in the fourth century during the reign of Constantine, the first Roman emperor to officially convert to Christianity. It was sacked after Jerusalem fell to the Persians in the seventh century, then rebuilt and later destroyed by Muslim caliphs in the 11th century. After the Crusaders captured Jerusalem, the church was restored in the 12th century but burned to the ground in the 19th century and then rebuilt yet again.

A site known as the Garden Tomb is said by some to be the site of the crucifixion, while the Church of the Holy Sepulcher is more commonly deemed by Christians to be the

place where Jesus was buried and rose again. At the time, it was outside the Old City, but the wall was later moved to include the church and its famous tomb.

The marble shrine, known as the Aedicule, was built in its existing form in 1810 during the Ottoman era and has been crumbling lately. But only after pressure from the Israelis did the three religious communities that jealously share the church, Greek Orthodox, Armenian Orthodox and Roman Catholic, agree to a renovation that began last spring.

Chosen to handle the project was the National Technical University of Athens, which had worked on restorations of the Acropolis in Athens and the Hagia Sophia mosque turned museum in Istanbul. The National Geographic Society teamed up with the university to work on cultural restoration and the National Geographic Channel will air a program later this month documenting the project.

Under the direction of Antonia Moropoulou from National Technical University, the conservation experts removed the iron cage built by the British in 1947 to shore up the earthquake-damaged Aedicule and then began taking apart the shrine piece by piece. They removed disintegrating mortar, reconstructed parts of the sometimes-swollen masonry, reset the columns and injected grout into cracks in the structure.

Rainwater had deteriorated much of the mortar over the centuries. Iron support bars that were fully corroded will be removed and replaced by titanium.

The specialists had no plans at first to open the tomb, but they decided a couple of weeks ago that they needed to do so in order to ensure that nothing could leak inside.

It was a delicate operation. The top of the tomb was split, and the specialists worried that lifting it would break it.

"The main goal was not to break the plate," said Harris Mouzakis, an assistant professor of civil engineering at National Technical University who is working on the project.

The team felt the pressure. "We had to be very careful," Mr. Mouzakis said. "It was not just a tomb we had to open. It was the tomb of Jesus Christ that is a symbol for all of Christianity - and not only for them but for other religions."

Once they removed the marble cladding, they discovered another marble slab with a cross carved into it. Beneath that, they found the limestone slab hewed from the wall of a cave that is believed to be where Jesus lay after his death.

That slab had not been seen since at least the 1500s. The team worked around the clock for three days, gathering dirt and other material from inside the tomb for future study. They closed it again quickly to avoid disrupting the visits of pilgrims who still flock to the church each day.

"Every Christian, they want to come and visit the holy place and open his heart to them," said Father Isidoros, 43, who first came to the church a quarter-century ago, and lives there.

Ducking his head, Father Isidoros brought me into the tiny room where the tomb rests. A small window had just been installed opposite the tomb to show the original cave walls where Jesus is believed to have been buried. The tomb itself looked plain and unadorned, its top separated down the middle. The candles flickered, illuminating the small enclosure.

The hardest part of the renovation is now behind the team, but months of work to bolster the shrine lay ahead.

"It will last many, many years," Mr. Mouzakis said. "We will succeed if after 200 or 500 years somebody will come back to restore our work."

Please visit the site: <http://www.nytimes.com/2016/11/04/world/middleeast/jesus-tomb-opened-jerusalem-constantine.html> [Go there for pix]

DUBAI EXCAVATIONS

Archaeological site found south of Dubai shows key aspects of life in Iron Age Arabia
Ancient gold jewellery, pottery and other items show Iron Age civilization thrived thousands of years ago south of Dubai

Set in a spectacular desert landscape south of modern emirate, the site known as Saruq Al Hadid is an archaeological treasure trove first discovered in 2002 by His Highness Shaikh Mohammad Bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai.

The site is an important archaeological find which shows that Dubai did not become a centre of trade only in the 21st century, or after the development of the Dubai Creek.

The Saruq Al Hadid site, preserved by the dunes that covered it for millennia before being discovered, provides ample evidence that the emirate had strong trade links with a wide swathe of the ancient world - from Egypt to the Indian subcontinent, dating as far back thousands of years.

Today, experts consider Saruq Al Hadid as the jewel in the crown of Dubai's archaeology, a site of international significance that increases the understanding of industrial activity, trade and everyday life during the Iron Age.

How did they arrive at that conclusion? Some 12,000 pieces of archaeological pieces were found here so far, making it one of the largest and most important Iron Age sites in the Arabian Peninsula.

Together, these items tell a compelling history of Dubai's past, through which archaeologists are able to map the trading links that existed between Dubai and other countries in the region during the Iron Age.

These priceless Sarouq Al Hadeed pieces are now on display in a museum in Shandagha, Bur Dubai.

The exhibits include golden, bronze and metal foundry that discovered at Sarouq Al Hadeed Archaeological Site in the Rub' Al Khali desert (the Empty Quarter) South of Dubai.

In fact, the logo of Dubai Expo 2020 was inspired from a golden ring that was found at the site.

The rich collection of artifacts reveal that the Saruq Al Hadid site was one of the main centers of copper manufacturing of various tools in the region since the beginning of the Iron Age.

The site contains large amounts of metal ores and remains of domesticated animals that date back to thousands of years.

Please visit the site: <http://gulfnews.com/news/uae/culture/know-the-uae-archaeological-site-found-south-of-dubai-shows-key-aspects-of-life-in-iron-age-arabia-1.1924218> [Go there for pix]

BASSETKI EXCAVATION

Significant Bronze Age city discovered in Northern Iraq Archeologists from the University of Tübingen perform excavation work just 45 kilometers from IS territory - the settlement may have been an outpost of the Akkadian Empire.

Archeologists from the Institute for Ancient Near Eastern Studies (IANES) at the University of Tübingen have uncovered a large Bronze Age city not far from the town of Dohuk in northern Iraq. The excavation work has demonstrated that the settlement, which is now home to the small Kurdish village of Bassetki in the Autonomous Region of Kurdistan, was established in about 3000 BC and was able to flourish for more than 1200 years. The archeologists also discovered settlement layers dating from the Akkadian Empire period (2340-2200 BC), which is regarded as the first world empire in human history.

Scientists headed by Professor Peter Pfälzner from the University of Tübingen and Dr. Hasan Qasim from the Directorate of Antiquities in Dohuk conducted the excavation work in Bassetki between August and October 2016. As a result, they were able to preempt the construction work on a highway on this land. The former significance of the settlement can be seen from the finds discovered during the excavation work. The city already had a wall running around the upper part of the town from approx. 2700 BC onwards in order to protect its residents from invaders. Large stone structures were erected there in about 1800 BC. The researchers also found fragments of Assyrian cuneiform tablets dating from about 1300 BC, which suggested the existence of a temple dedicated to the Mesopotamian weather god Adad on this site. There was a lower town about one kilometer long outside the city center. Using geomagnetic resistance measurements, the archeologists discovered indications of an extensive road network, various residential districts, grand houses and a kind of palatial building dating from the Bronze Age. The residents buried their dead at a cemetery outside the city. The settlement was connected to the neighboring regions of Mesopotamia and Anatolia via an overland roadway dating from about 1800 BC.

Bassetki was only known to the general public in the past because of the "Bassetki statue," which was discovered there by chance in 1975. This is a fragment of a bronze figure of the Akkadian god-king Naram-Sin (about 2250 BC). The discovery was stolen from the National Museum in Baghdad during the Iraq War in 2003, but was later rediscovered by US soldiers. Up until now, researchers were unable to explain the location of the find. The archeologists have now been able to substantiate their assumption that an important outpost of Akkadian culture may have been located there.

Although the excavation site is only 45 kilometers from territory controlled by the IS, it was possible to conduct the archeological work without any disturbances. "The protection of our employees is always our top priority. Despite the geographical proximity to IS, there's a great deal of security and stability in the Kurdish autonomous areas in Iraq," said Professor Peter Pfälzner, Director of the Department of Near Eastern Archaeology at the IANES of the University of Tübingen. The research team consisting of 30 people lived in the city of Dohuk, which is only 60 kilometers north of Mosul, during the excavation work.

In another project being handled by the "ResourceCultures" collaborative research center (SFB 1070), Pfälzner's team has been completing an archeological inspection of territory in the complete area surrounding Bassetki as far as the Turkish and Syrian borders since 2013 - and 300 previously unknown sites have been discovered. The excavations and the research work in the region are due to be continued during the summer of 2017. "The area around Bassetki is proving to be an unexpectedly rich cultural region, which was located at the crossroads of communication ways between the Mesopotamian, Syrian and Anatolian cultures during the Bronze Age. We're therefore planning to establish a long-term archeological research project in the region in conjunction with our Kurdish colleagues," says Pfälzner. The excavation work is being funded by the Fritz Thyssen Foundation.

Please visit the site: <https://www.uni-tuebingen.de/en/news/newsfullview-news/article/bedeutende-bronzezeitliche-stadt-im-nordirak-entdeckt.html>

HOW THE CHICKEN CROSSED THE RED SEA - AFRICA'S OLDEST DOMESTIC CHICKEN BONES ARE RELICS OF ANCIENT TRADE ROUTE

The discarded bone of a chicken leg, still etched with teeth marks from a dinner thousands of years ago, provides some of the oldest known physical evidence for the introduction of domesticated chickens to the continent of Africa, research from Washington University in St. Louis has confirmed.

Based on radiocarbon dating of about 30 chicken bones unearthed at the site of an ancient farming village in present-day Ethiopia, the findings shed new light on how domesticated chickens crossed ancient roads -- and seas -- to reach farms and plates in Africa and, eventually, every other corner of the globe.

"Our study provides the earliest directly dated evidence for the presence of chickens in Africa and points to the significance of Red Sea and East African trade routes in the introduction of the chicken," said Helina Woldekiros, lead author and a postdoctoral anthropology researcher in Arts & Sciences at Washington University.

The main wild ancestor of today's chickens, the red junglefowl *Gallus gallus* is endemic to sub-Himalayan northern India, southern China and Southeast Asia, where chickens were first domesticated 6,000-8,000 years ago. Now nearly ubiquitous around the world, the offspring of these first-domesticated chickens are providing modern researchers with valuable clues to ancient agricultural and trade contacts.

The arrival of chickens in Africa and the routes by which they both entered and dispersed across the continent are not well known. Previous research based on representations of chickens on ceramics and paintings, plus bones from other archaeological sites, suggested that chickens were first introduced to Africa through North Africa, Egypt and the Nile Valley about 2,500 years ago.

The earliest bone-based evidence of chickens in Africa dates to the late first millennium B.C., from the Saite levels at Buto, Egypt -- approximately 685-525 B.C.

This study, published in the *International Journal of Osteoarchaeology*, pushes that date back by hundreds of years. Co-authored by Catherine D'Andrea, professor of archaeology at Simon Fraser University in Canada, the research also suggests that the earliest introductions may have come from trade routes on the continent's eastern coast.

"Some of these bones were directly radiocarbon dated to 819-755 B.C., and with charcoal dates of 919-801 B.C. make these the earliest chickens in Africa," Woldekiros said. "They predate the earliest known Egyptian chickens by at least 300 years and highlight early exotic faunal exchanges in the Horn of Africa during the early first millennium B.C."

Despite their widespread, modern-day importance, chicken remains are found in small numbers at archaeological sites. Because wild relatives of the galliform chicken species are plentiful in Africa, this study required researchers to sift through the remnants of many small bird species to identify bones with the unique sizes and shapes that are characteristic of domestic chickens.

Woldekiros, the project's zooarchaeologist, studied the chicken bones at a field lab in northern Ethiopia and confirmed her identifications using a comparative bone collection at the Institute of Paleoanatomy at Ludwig Maximilian University in Munich.

Excavated by a team of researchers led by D'Andrea of Simon Fraser, the bones analyzed for this study were recovered from the kitchen and living floors of an ancient farming community known as Mezber. The rural village was located in northern Ethiopia about 30 miles from the urban center of the pre-Aksumite civilization. The pre-Aksumites were the earliest people in the Horn of Africa to form complex, urban-rural trading networks.

Linguistic studies of ancient root words for chickens in African languages suggest multiple introductions of chickens to Africa following different routes: from North Africa through the Sahara to West Africa; and from the East African coast to Central Africa. Scholars also have demonstrated the biodiversity of modern-day African village chickens through molecular genetic studies.

"It is likely that people brought chickens to Ethiopia and the Horn of Africa repeatedly over long period of time: over 1,000 years," Woldekiros said. "Our archaeological findings help to explain the genetic diversity of modern Africans chickens resulting from the introduction of diverse chicken lineages coming from early Arabian and South Asian context and later Swahili networks."

These findings contribute to broader stories of ways in which people move domestic animals around the world through migration, exchange and trade. Ancient introductions of domestic animals to new regions were not always successful. Zooarchaeological studies of the most popular domestic animals such as cattle, sheep, goats and pigs have demonstrated repeated introductions as well as failures of new species in different regions of the world.

"Our study also supports the African Red Sea coast as one possible early route of introduction of chickens to Africa and the Horn," Woldekiros said. "It fits with ways in which maritime exchange networks were important for global distribution of chicken and other agricultural products. The early dates for chickens at Mezber, combined with their presence in all of the occupation phases at Mezber and in Aksumite contexts 40 B.C.-600 A.D. in other parts of Ethiopia, demonstrate their long-term success in northern Ethiopia."

Please visit the site: https://www.eurekalert.org/pub_releases/2016-11/wuis-htc110216.php

AN ANCIENT TSUNAMI THAT ENDED A CIVILIZATION GETS ANOTHER LOOK, BY HENRY FOUNTAIN

In the 17th century B.C., Santorini was a small volcanic island in the Aegean Sea, home to Akrotiri, a Late Bronze Age outpost of Minoan civilization, which preceded ancient Greece. Then the volcano erupted, burying Akrotiri in ash and obliterating much of Santorini, turning it into a few smaller islands.

The eruption was one of the world's most powerful in the past 10,000 years, spewing some 20 cubic miles of rock into the skies and spawning a tsunami that struck the nearby island of Crete, which was the center of Minoan culture. Many archaeologists believe the tsunami was disruptive enough that the Minoans became easier prey for the outside invaders who conquered them a century and a half later and brought an end to one of the first European civilizations.

But what caused the tsunami? Research published Tuesday, including seafloor surveys, suggests that it was likely caused by huge amounts of hot ash and lava spewing from the volcano — what volcanologists call pyroclastic flows — and pouring down its slopes into the water at high speed.

The study contradicts earlier explanations that the tsunami must have been the result of a caldera collapse, which occurs when the crust above a volcano's magma chamber slips swiftly downward as the chamber empties during an eruption. At Santorini, the thinking went, much of the island — the caldera was huge — sank suddenly into the Aegean, triggering the tsunami.

The new data suggests that the caldera was cut off from the sea. "When the caldera collapsed, it was isolated — there was no water inside," said Paraskevi Nomikou, a geologist at the National and Kapodistrian University of Athens and the lead author of the study in *Nature Communications*.

Dr. Nomikou said that other surveys show deposits of pyroclastic material up to 200 feet thick just off Santorini. Pyroclastic flows can travel at speeds of several hundred miles an hour down slopes, so there was enough lava and ash, moving quickly enough, to spawn a tsunami.

In this respect, Dr. Nomikou said, the eruption at Santorini is comparable to another eruption, at Krakatoa in the Sunda Strait in Indonesia in 1883. Pyroclastic flows from that eruption caused a tsunami that killed more than 35,000 people.

Please visit the site: <http://www.nytimes.com/2016/11/10/science/santorini-akrotiri-tsunami.html>

SHACKLE-BOUND SKELETON FOUND IN ETRUSCAN BURIAL - THE GRUESOME FIND SUGGESTS THE ANCIENT PEOPLE HAD A DARK SIDE

Archaeologists digging in central Tuscany have brought to light a dark side of the Etruscan civilization, unearthing a 2,500-year-old skeleton still bound by shackles on his neck and ankles.

The finding appears to be the first case of an Etruscan burial containing a shackled individual.

The unusual grave was found in Populonia, a unique Etruscan settlement built directly on the sea. There, in a simple pit dug into the sandy soil near the beach of Baratti, the archaeologists found the complete skeleton of a male between 20 and 30 years of age.

Almost five pounds of iron bound his legs, while a heavy iron collar was wrapped around his neck.

"He died in shackles and was buried with a shroud tied to the body. We found a black spot under the nape, most likely what remained of a wood object which was likely connected to the iron collar," Giorgio Baratti, professor of archaeology at the University of Milan, told Seeker.

It's likely the unfortunate man endured a device that was connected from the head to the feet with perishable materials such as ropes or leather.

An iron ring found in one of his left fingers might have been part of the device, which was meant to impede his ability to take long steps.

Baratti, whose last name is oddly the same of the beach where the skeleton was unearthed, believes the man was likely a slave or someone who had to bear a definitive punishment.

A slave might have been employed in maritime activities as well as in the iron mines in the area. Between the 6th and 4th centuries B.C., Populonia was the main center in the Mediterranean for iron processing, with the metal coming mainly from the Elba island.

"Notably, he was interred in a necropolis which features normal burials. This is something you would not expect," Baratti said.

Despite the lack of grave goods, Baratti was able to date the shackle burial to at least the 5th century B.C.

"Right on top of the shackled man, we found the grave of a woman buried with earrings and other goods which clearly date to the 4th century B.C. We estimate that at least a century had passed before they built a new necropolis," Baratti said.

The finding reveals a lesser known aspect of the Etruscan civilization, which began to flourish around 900 B.C., and dominated much of Italy for five centuries. Known for their art, agriculture, fine metalworking and commerce, the Etruscans became absorbed into the Roman empire by 300-100 B.C.

Their richly decorated tombs have painted an image of a fun-loving and eclectic people who respected women and taught the French how to make wine, the Romans how to build roads, and introduced the art of writing into Europe.

The shackled man reveals a more disturbing side of the traditional Etruscan image.

"They could be cruel as well," Baratti said.

He described the Phersu funerary game, depicted in at least four tombs in Tarquinia, in which a masked man known as Phersu holds a dog on a leash.

As the Phersu pulled on the leash, a nail on the dog's collar dug into the animal's neck, angering the dog and causing it to attack a man. Many scholars are also now convinced that the Etruscans performed human sacrifice. Excavations carried out between 1982 and 2005 revealed gruesome remains in a monumental sacred area of Tarquinia.

"Many individuals, including children, a woman and a foreign man, were decapitated, dismembered and/or physically abused," leading Etruscan scholar Nancy Thomson de Grummond, professor of classics at Florida State University, told Seeker.

According to Baratti, further research is needed to understand the shackled burial.

Analysis, including DNA, might reveal more about the mysterious individual, if he had diseases and whether he was a local or foreigner.

Please visit the site: <http://www.seeker.com/skeleton-bound-by-shackles-found-in-etruscan-burial-2085230024.html> [Go there for pix]

ANCIENT LATRINES, A LUCKY HORSE: NEW FINDS AT CIRCUS MAXIMUS (UPDATE), BY FRANCES D'EMILIO

Six years of excavations have given Rome a new tourist attraction in Circus Maximus , the sprawling valley where chariot races once delighted the ancient city's denizens.

The archaeological ruin has long been a vast muddy, grassy field, lately used largely by dog-walkers and joggers.

But starting Thursday, the public can see ancient latrines, chunks of what was once a triumphal arch honoring the Emperor Titus , and learn about a winning horse dubbed Numitor, which ran on the oval track some 2,000 years ago.

Rome's newest tourist site comes as a counterpoint to Italy's often discouraging cultural developments, like the erosion by pollution or the crumbling of parts of monuments that can't be adequately protected by Italy's chronically lean budget for its enormous catalog of historical and artistic heritage.

For decades, Circus Maximus was littered with syringes from drug users who used to shoot up there at night. The expanse also hosted political rallies and mega-concerts, like those for The Rolling Stones or Bruce Springsteen.

Claudio Parisi Presicce, Rome's top official for archaeology and other monuments, said Wednesday that Numitor the horse will become the logo for Circus Maximus, which sits in a valley between the ancient Palatine and Aventine Hills.

Decorating the bottom of an excavated glass goblet—the only fragment found of the vessel—is the gold figure of a proudly prancing horse, with a palm branch symbolizing victory in its mouth and the name Numitor emblazoned below.

Archaeologist Marialetizia Buonfiglio told the AP the image is the only documentation found so far of the horses involved in the ancient entertainment that captivated bettors. The goblet's precious fragment, along with some of the 1,000 bronze coins that were dug up, will eventually find a home in a museum.

Excavated areas include the outside upper tiers, where the rank-and-file entertainment-goers once cheered wild animal hunts or charioteers, whipping around a low stone wall that ran down the center of the oval track.

Also visible is a latrine once used by spectators. An explanatory panel, in Italian and English, tells how urine was collected via pipes in ancient Roman times to be used to launder cloth.

The excavation helped archaeologists understand the various reconstructions that the Circus Maximus underwent, including one after its wooden timbers helped feed the great fire in Rome during Nero's reign in 64 A.D.

Visitors can climb inside a restored 12th-century tower for a commanding view down the 600-meter (2,000-foot) long field, capturing the imposing dome of Rome's main synagogue in their sights.

At the foot of the tower are excavated chunks of what was once the 10-meter (33-foot) high Triumphal Arch of Titus at the field's the south end. The arch, fashioned from Carrara marble, was built to honor the emperor's conquest of Jerusalem.

Thanks to a written record left by an anonymous pilgrim in the 9th-century, when the arch still stood, experts were able to make sense of fragments they discovered of the arch's inscription in bronze letters.

Circus Maximus' excavation will be open every day through Dec. 11. After that, opening hours will be reserved for weekends, although visitors can call City Hall (+39-06-0608) to make an appointment to see it on weekdays.

Rome isn't the only Italian city with ancient roots boasting of new archaeological possibilities for tourists.

At Pompeii, near Naples, officials on Wednesday inaugurated a 60-room residential complex that had been buried by Mount Vesuvius' eruption in 79 A.D. Newly restored so tourists can visit it, the Geometric Mosaics Domus boasts terraces with breathtaking views of Capri, an island in the Gulf of Naples.

Please visit the site: <http://phys.org/news/2016-11-ancient-latrines-lucky-horse-circus.html>

ISRAELI ARCHAEOLOGIST ANNOUNCES RETURN TO MASADA AFTER TEN-YEAR ABSENCE, BY AMELIE BOTBOL

Dr. Guy Stiebel, former director of excavations at Masada, says much is yet to be discovered at the site. The Sonia and Marco Nadler Institute of Archaeology held the sixth session of its annual conference this Thursday at Tel Aviv University. Some 250 people gathered in the hallway including renowned researchers, representatives from the Israel Antiquity Authorities, and archaeology enthusiasts, for the event loaded with additional significance as the Institution was ranked 50th in the 2016 QS World University Rankings by Subject.

"We are the biggest institute working on the ground, from Beit-Yerach and Megiddo, in the North to the Timna Valley, in the South. We are currently excavating from Ashdod-Yam and Apollonia-Arsuf along the coast to the City of David in the Hill, Azekah and Beit-Shemesh in the Shrophelah. From the Prehistorical site of the Qesem Cave to the Bronze and Iron Ages sites, up to the period of the Crusaders. We are currently the only university operating in the City of David and we will soon be resuming the excavations in Masada," Dr. Oded Lipschits, Head of the institute, told i24news in response to the recent consecration.

Dr. Guy Stiebel, former director of excavations at Masada, will this February conduct a new series of archaeological digs to pierce the secrets of this national shrine.

Dr. Stiebel expressed his excitement to return to the site after a ten year absence, enthusiasm that was reciprocated by conference organizers.

"A lifetime would not suffice to get a glimpse of all the hidden beauties of Masada," he said. "Its magic is not just in the military equipment, it is also in small things."

"Artefacts on display at sixth session of the annual archaeology conference held Thursday at Tel Aviv University"

To highlight the diversity of this outstanding historical site, Stiebel exhibited a remarkable collection of relics. First, he presented a lice removal comb found on the site, surprisingly similar to the ones used today. A small urn with preserved wine was exposed as well. The wine is now solid and is said to be 2000 years old. Broken clay pottery used as bread coupons on display have unbelievably kept the baker's signature.

Although some believe that 97 percent of Masada's potential has already been exploited, Stiebel says that its core is yet to be discovered. He uses a slide projector showing the changes of Masada over 50 years to support his claim.

Scattered relics are reassembled in Tel Aviv University from where they will be then sent to the Israel Antiquity Authority.

"Artefacts on display at the sixth session of the annual archaeology conference held Thursday at Tel Aviv University"

Both Israeli and international students are widely involved in all stages of the process. Many of them even completed their entire master's degree while working in the excavations of Qesem Cave, Megiddo and Azekah.

"Students have become very proficient. So much that we try not to interrupt them with their work" confessed Dr. Ron Barkai.

"Studying in Tel Aviv University is an amazing experience. The archeological department is very small and warm. The accomplished field researchers guiding us are very supportive." added Omer, a Master's student at the University.

Barkai and his team have been working on restoring the cave for more than 15 years now. He believes the site might help understand the origins of modern humans. "We only scratched the surface but 20 people can already fit inside." he revealed proudly.

"Artefacts on display at the sixth session of the annual archaeology conference held Thursday at Tel Aviv University"

Yuval Gadot, the head of the only academic team operating controversially in the City of David, discussed the stakes at play. In 2013, over 80 academics signed a petition demanding the cancellations of all archaeological activities in the site. Gadot has, nonetheless, managed to follow through and is now ready to share his insights.

He most recently focused on layers of waste from the 1st century CE and went over the implications of his findings on life in Jerusalem in the time of Jesus.

He found that the Roman ingenuity associated with the Jewish obsession with cleanliness resulted in a unique and innovative system for the disposal of garbage. This 2000-year-old landfill was undoubtedly the most advanced of its time.

More relics are housed by the facility each year and more maps are drawn as well. The research is always going forward.

"Meeting those who follow us is our greatest joy. Next year, we will continue with all these projects. In addition, we will launch excavations in the important Biblical site of Kiryat Yearim" concluded Lipschits.

Amelie Botbol is an intern reporter for i24News.

Please visit the site: <http://www.i24news.tv/en/news/israel/society/129388-161105-israeli-archaeologist-announces-return-to-masada-after-ten-year-absence>

EGYPTIAN GIANT CROCODILE MUMMY IS FULL OF SURPRISES

A three-metre-long mummified Egyptian 'giant crocodile', one of the finest animal mummies in the Dutch National Museum of Antiquities (Rijksmuseum van Oudheden), turns out to be literally filled with surprises. Examination of detailed new 3D CT scans has led to the conclusion that, besides the two crocodiles previously spotted inside the wrappings, the mummy also contains dozens of individually wrapped baby crocodiles. This is an exceptional discovery: there are only a few known crocodile mummies of this kind anywhere in the world. Starting on 18 November, museum visitors can perform a virtual autopsy on the 3,000-year-old mummy, using an interactive visualisation exhibit in the new Egyptian galleries.

Virtual autopsy in museum galleries

A new scan of the large crocodile mummy was recently performed at the Academic Medical Centre (AMC) in Amsterdam. An earlier CT scan in 1996 had shown that there are two juvenile crocodiles inside a mummy that looks like one large crocodile. The Swedish company Interspectral, which specializes in high-tech interactive 3D visualizations, has converted the results of the new scan into a spectacular 3D application and thus detected the dozens of baby crocodiles. Starting on 18 November, museum visitors can perform an interactive virtual autopsy on the crocodile mummy and the mummy of an Egyptian priest. On a large touch screen, they can examine the mummies layer by layer, learning about their age, physical features, and the mummification process. The amulets placed inside the linen wrappings with the mummies can also be examined in detail and from all sides in 3D.

A surprise

The museum's Egyptologists suspect that the crocodiles of different ages were mummified together as a reference to the ancient Egyptian belief in rejuvenation and new life after death. Another possibility is that no large crocodiles were available at a time when they were needed as offerings to the gods. The mummy was given the shape of one large crocodile with various kinds of stuffing: bits of wood, wads of linen, plant stems, and rope. The ancient Egyptians mummified all sorts of animals, usually to pay homage to a particular deity that could manifest in animal form. For instance, crocodiles were offered to the god Sobek.

The museum's curator are excited about this remarkable find: 'What was intended as a tool for museum visitors, has yet produced new scientific insights. When we started work on this project, we weren't really expecting any new discoveries. After all, the mummy had already been scanned. It was a big surprise that so many baby crocodiles could be detected with high- tech 3D scans and this interactive visualization.

Please visit the site: <http://popular-archaeology.com/issue/fall-2016/article/egyptian-giant-crocodile-mummy-is-full-of-surprises1>

ARCHAEOLOGISTS FIND 'SNAPSHOT' OF 4,500-YEAR-OLD CANAANITE CITADEL'S LAST HOURS, BY PHILIPPE BOHSTROM

As the ceiling of the blazing Canaanite palace collapsed, foods, jewelry, axes and treasures were buried, and beautifully preserved, under ash and blackened stone.

Excavations inside a 4,500 year-old citadel Khirbet al-Batrawy, located in the fringes of the black desert in northeastern Jordan, have uncovered a rich layer of archaeological finds beneath a destruction layer of ash and rock that, ironically, protected the antiquities from the final conflagration. Among the discoveries are prestige items in excellent condition, that the archaeologists believe have belonged to the rock-fortress chieftain of the palace.

Four copper axes, a bearskin and a highly decorated drinking cup were found inside a pillared hall of the vast ruined palace, along with dozens of ceramic pots, jars, cups and storage vessels that apparently served as feasting vessels.

Massive fortifications

The citadel of Khirbet al-Batrawy sits on top of a naturally fortified triangle hill overlooking the fertile and well-watered Zarqa River valley in north-central Jordan.

The city rose to prominence in the middle of the 3rd millennium BCE, largely due to its strategic location at the intersection of two important trading routes: a northeastern one leading into the Arabian Desert and Mesopotamia, and a southern route passing by the Gulf of Aqaba to the Sinai and the Arabian peninsula.

It was the period of 4th, 5th and 6th dynasties in Egypt (around 2600-2100 B.C.E.), a time of brisk trading - under watchful Egyptian control - of salt, copper, bitumen and sulfur, as well as gems, spices and exotic goods, a trade that played an important role in the development of the region. (Newly discovered harbors in the Red Sea dating to the 4th dynasty suggest there was also a southern route crossing the Sinai Desert to the copper mines of Timna as well.)

Now excavations undertaken by the La Sapienza University and the Department of Antiquities of the Hashemite Kingdom have uncovered an impressive citadel heavily fortified with mud-brick walls, towers and gates, sitting on three-meter high stone foundations. On top of the hill stood a huge palace-citadel complex, 2,000 square meters in area, intricately structured with wings, halls, courtyards and passageways.

The archaeological team believes this fortified palace may have been the heart of a territorial state. However, in 2300 B.C.E., the citadel came to a violent end, and was reduced to a heap of smoking ruins. "Raiders from the desert, possibly the vanguard of the Ammorreans, were behind the attack," postulates Prof. Lorenzo Nigro, head of the excavations.

The ceilings of the palace collapsed in the blaze, burying all under a thick layer of ash and burnt bricks, carbonized beams and combusted stones - and leaving the archaeologists with a snapshot of the besieged citadel's final hours.

Copper arrowheads, cornelian beads and fragments of a potter's wheels were found, along with large quantities of ceramic storage jars containing barley, beer, red ochre and animal fat, as were a large amount of intact pottery vessels, some decorated with snake and scorpion motifs, and imported vases.

Tools and objects made of copper, clay, wood, bone, sea-shell, leather and textile demonstrate the brisk flow of goods passing through the palace.

Palace of the Copper Axes

The excavators found the remains of a particularly intriguing rectangular hall, whose roof had been supported by four wooden pillars. Finely plastered hallways led to the main hall - which had a surprise inside.

More than 20 pithoi (storage jars), with a storage capacity of 150 liters were arrayed along the sides of the hall, as well as a large number of smaller vessels, such as red-polished jugs and juglets.

Nigro has a theory about the collection of so many assets in one place. "The hall was a dining hall, where all precious items had been gathered in the days of the final siege of the city," he told Haaretz.

The four copper axes were found at the base of a pillar, wrapped in a rag that left a textile impression on their blades, earning the building the soubriquet of "Palace of the Copper Axes."

A bear paw was also found nearby, which the zoo-archaeologist F. Alhaique thinks belonged to a bearskin probably used for clothing in the freezing desert winter and windy hills of Batrawy. (There are native bears in the Middle East, such as the honey colored Syrian bear and the desert can get very cold at night, especially in winter.)

A double-handled vessel with a spherical body and a squat grooved pedestal set apart from the ceramic assemblages was also found a few centimeters from the pillar.

"They may hint at the establishment of a 'code' of power: the axes and the bearskin are connected with the idea of a military leader, while the unique ceremonial vessel, which stands out from the others in terms of shape, décor and its base, is possibly related to feasting with this ruler in palace," Nigro speculates.

Whatever symbols of power these items constituted, they seem to have been of little avail. The palace was deserted before the final attack, as we know because no human remains were found amid the destruction debris, but only animal bones.

Please visit the site: <http://www.haaretz.com/jewish/archaeology/1.752808> [Go there for pix]

ANCIENT LYDIAN CITY IN TURKEY NEEDS METICULOUS STUDY

Mesotimolos, a city from the Lydian civilization near Düzköy in Uşak's Eşme district, is about to be the subject of archeological studies. Its rocky houses, graves and human footprints in its volcanic remains will be unearthed after scientific studies and will hopefully become a center for history and nature tourism thanks to its geographic beauty and fairy chimney formations. Making on-site examinations in the region with Anadolu Agency, Uşak Governor Ahmet Okur said the region, which is known as the Kale region near Düzköy, has attracted attention as an important historical and geographical destination.

The carved houses and tombs in Mesotimolos can be seen in the valley surrounded by volcanic rocks while it is also possible to come across thousands-of-years-old human footprints in the volcanic remains of the region. Okur said, "This is an area that needs to be investigated and examined. There are many ruins belonging to ancient civilizations in the region, which are very valuable reminders that will be brought to the surface by scientific research. It is a historic area that has remained untouched."

Noting that the region has attracted attention thanks to its formation of fairy chimneys, Okur said they wanted to bring the region into a more prominent place in Turkish history and nature tourism. Stating that the archaeological work will make a significant contribution to the recognition of the region, Okur continued: "The formations of fairy chimneys are worth seeing. This is not a very well-known region. I invite all nature lovers to this beautiful hiking area. It is a region that needs to be recognized and visited." Suggesting that transportation to the region will be made easier, Okur said more visitors will come to the region with the increase in scientific studies, and stressed that due to its proximity to the Ulubey Canyons, its popularity can quickly increase. Conducting soil analysis in the region, Assoc. Prof. Ahmet Atasoy from Uşak University, Faculty of Science and Literature, Department of Geography stated that the research they carried out in the field is ongoing, adding that the region is waiting to be discovered both geographically and historically.

Stressing that the age of the human footprints found in the volcanic remains in the field and presumed to be thousands of years old should be determined and the footprints immediately protected, Atasoy said: "We think the footprints belong to the years when the volcanic formation took place. There are similar volcanic structures in the Kula region. In the region, there are rock dwellings and tunnels that go to the valley. In this sense, it is a region with archaeological value. There are strong clues that it was an ancient settlement." He also stressed that a feasibility study should be conducted urgently, the ages of the formations should be determined, and a team of archaeologists should carry out work in the region.

Please visit the site: <http://www.dailysabah.com/history/2016/11/11/ancient-lydian-city-in-turkey-needs-meticulous-study>

SYRIAC STELE FROM EDESSA

The Turkish press reports that farmers ploughing a field at Urfa in South-East Turkey struck a hard object, which turned out to be a tablet inscribed with Syriac, using the Estrangelo alphabet.

It was found about eighteen inches below the ground, and weighs about 100 pounds. It seems to be about 30 x 60 (either inches or centimeters - I couldn't work out).

No word on what it says. Apparently people at Harran university are going to take a look at it, but it will be placed in the museum at Urfa.

Urfa is the site of Edessa, the city whose Aramaic dialect became what we now call Syriac during the period after the conquests of Alexander. The city was always central to Syriac culture, but was destroyed by the Moslems during the crusader period.

Please visit the site: <http://thesyriac.blogspot.com/2010/02/syriac-tablet-found-at-edessa-in-turkey.html> [Go there pict]

**THE DIRTY SECRET ABOUT ANCIENT
BATHROOMS EXCAVATIONS AT THE MOST
FAMOUS RACING STADIUM IN THE ANCIENT
WORLD HAVE BEEN COMPLETED, AND ONE OF
THE BEST PRESERVED PARTS TURNS OUT TO
BE THE TOILETS-ADDING TO A RICH HISTORY
OF THE DISPOSAL OF HUMAN WASTE,
BY CANDIDA MOSS**

When people think of Rome they think of the Coliseum, but this year the Coliseum has an ancient athletic rival: the Circus Maximus. After years of excavations and improvements, Rome's charioteer stadium-the ancient equivalent of a NASCAR track-is finally open to the public. But however you feel about the races there's plenty of interesting stuff to be seen here; the ancient world's largest shopping mall, among them. But for my money one of the most interesting features is the well-preserved and very public ancient latrines, which operated with water siphoned from the nearby aqueduct. Bear with me. They're a testament to Roman engineering and evidence that even though the Romans had a highly developed sense of decorum, they didn't mind emptying their bowels en masse.

The multi-seat bathrooms (foricae) at the Circus Maximus are not unique; on the contrary, they existed all over the place. There is one at Ostia Antica, the ancient port of Rome; another at Ephesus in Turkey; another in Timgad, Algeria; and another at the emperor Hadrian's second-century villa in Tivoli, Italy. They are everywhere. What they have in common is benches punctuated by keyhole-shaped openings that faced inwards and that usually sat about eight to twenty people. It seems that most people expected to do their business cheek-to-cheek.

Despite their proficiency with plumbing and engineering, the Romans did not invent the toilet. According to Cambridge archeologist Augusta McMahon, the first simple toilets were Mesopotamian pits, about 1 meter in diameter, over which users would squat. The pits were lined with hollow ceramic cylinders that prevented excrement from escaping. Approximately 1000 years later the Minoans invented the flush. The first flushing toilet, excavated at the palace of Knossos in Crete, washed waste from the toilet to the sewer. By the Hellenistic period large-scale public latrines brought toilets to the effluent masses. Because of the public nature of the ancient bathroom they became sites for gossip and mockery. The emperor Tiberius actually banned people from carrying his image (on coins or rings) into the latrines. Archeologists have discovered games lodged between the seats, suggesting that there was social interaction between latrine users.

For the better off in society there was the possibility of some privacy. The ancient Jewish legal code the Mishnah refers to the existence of a lockable "latrine of dignity" in the Temple. And there appear to have been private toilets reserved for commanders at Roman forts. Hadrian's villa, too, includes single-seater toilets, presumably for use by the

emperor and those of high social status. As Gemma Jansen has argued, all of this suggests that bathroom privacy was a luxury for the wealthy.

Even though there's plenty of evidence for socializing in ancient bathrooms, there's some indication that Romans were anxious about going into latrines. The issue was not a question of sanitation (although some Roman bathroom graffiti instructs people "don't shit here"), but safety. Bathroom business, like everything else in the ancient world, required divine protection from malevolent forces. Dr. Mary Jane Cuyler, assistant director of the University of Texas's Ostia synagogue excavation, told The Daily Beast, "On one of my early visits to Ostia I was perplexed to discover an elaborate altar and shrine to the goddess Fortuna in one of the latrines in the firefighters' barracks. At the time I thought it was a fluke, but I later learned that Fortuna is often associated with public latrines and with bathhouses." She added, "This isn't just something we know from the archaeological record. The Christian writer Clement of Alexandria actually mocks Romans for their practice of installing their greatest goddess in a latrine. He claims it's a fitting temple for her!"

Clement may mock the Romans, but there seems to have been some legitimate cause for concern: it is likely that rats and other animals inhabited the Roman sewer and latrine system. And they would have posed a very real danger to men seated at latrine benches. Perhaps worshipping the goddess wasn't a bad idea.

The evidence is ambiguous but one of the interesting features of most ancient and medieval bathrooms is that they generally do not appear to have been segregated by gender. Even though women were prohibited from participating in or entering many kinds of all-male spaces in the ancient world, the latrine wasn't one of them.

In fact gender-segregated bathrooms were an innovation of the Victorian era, when they struck a blow for women's rights. Up until the introduction of segregation in the nineteenth century, men had exclusive access to public restrooms. The result was that women were effectively tethered to their homes. While urinating over gutters or into "urinettes" (a small portable device that was used under long skirts and discretely emptied) were options, they were hardly preferred. Gender-segregated bathrooms, therefore, were actually a positive step. The 1887 Massachusetts law that mandated that workplaces provide bathrooms for female employees made it possible for women to hold down jobs without "holding it."

The relatively recent history of gender-segregated bathrooms bubbled to the top of our consciousness in the wake of HB2, the North Carolina law that requires people use the bathrooms that correspond to the gender identified on their birth certificates. A whole host of cultural commentators observed that gender-segregation was a relatively new phenomenon. The history of bathrooms is more interesting than one might imagine, giving us a view into class systems, gender politics, and (for those who want to do the digging) ancient diet. But if none of this is for you the Circus Maximus offers athletics, ancient shops, and, of course, brothels.

Please visit the site: <http://www.thedailybeast.com/articles/2016/11/20/the-dirty-secret-about-ancient-bathrooms.html>

CURRYING FLAVOR

World's first curry was made 5,000 years ago: Indians have been eating their national dish since the Bronze Age. Ancient Indians used advanced farming techniques to bring in rice, bean, lentils tuck into curries, dhal and rice dishes. Archaeologists have discovered that rice was cultivated in India at the same time farming techniques were developed in China. New information confirms the Indus people were world's earliest farmers.

Indians have been tucking into curries, dhals and rice dishes since the Bronze Age, according to new research, and probably even had takeaways.

Ancient Indians used advanced farming techniques to bring in rice, bean, lentils tuck into curries, dhal and rice dishes - around 5000 years ago.

Archaeologists have discovered that rice was cultivated in India at the same time farming techniques were developed in China, around 2800BC, and 400 years earlier than previously thought.

Research discovered that the ancient Indus Civilisation, which stretched across what is now Pakistan and northwest India during the Bronze Age, had massive cities of up to 40,000 people because their advanced farming techniques meant they could grow surplus food and spices that would be traded at central hubs.

The new information confirms that the Indus people were the world's earliest farmers, after they were previously thought to have learned rice farming techniques from the Chinese.

The research also confirms that Indus populations were the earliest people to use complex multi-cropping strategies across both seasons, growing foods during summer, like rice, millets and beans, before swapping to winter crops in the colder seasons - like wheat and barley.

Researchers from the University of Cambridge reckon a network of regional farmers supplied assorted produce to the markets of the civilisation's ancient cities.

Study co-author Dr Jennifer Bates said: 'We found evidence for an entirely separate domestication process in ancient South Asia, likely based around the wild species *Oryza nivara*.

'This led to the local development of a mix of 'wetland' and 'dryland' agriculture of local *Oryza sativa indica* rice agriculture before the truly 'wetland' Chinese rice, *Oryza sativa japonica*, arrived around 2000 BC.

'While wetland rice is more productive, and took over to a large extent when introduced from China, our findings appear to show there was already a long-held and sustainable culture of rice production in India as a widespread summer addition to the winter cropping during the Indus civilisation.'

Evidence for very early rice was discovered at a site in the central Ganges basin, but it has long been thought that domesticated rice agriculture did not reach South Asia until

towards the end of the Indus era, when the wetland rice arrived from China around 2000 BC.

But researchers found evidence of domesticated rice in South Asia as much as 430 years earlier, making them the earliest farmers.

The new research is published today in the journals *Antiquity* and *Journal of Archaeological Science* by researchers from the University of Cambridge's Division of Archaeology, in collaboration with colleagues at Banaras Hindu University and the University of Oxford.

Co-author Dr Cameron Petrie says that the location of the Indus in a part of the world that received both summer and winter rains may have encouraged the development of seasonal crop rotation, way before other major civilisations of the time, such as Ancient Egypt and China's Shang Dynasty.

Dr Petrie added: 'Most contemporary civilisations initially utilised either winter crops, such as the Mesopotamian reliance on wheat and barley, or the summer crops of rice and millet in China - producing surplus with the aim of stockpiling.

'However, the area inhabited by the Indus is at a meteorological crossroads, and we found evidence of year-long farming that predates its appearance in the other ancient river valley civilisations.'

The archaeologists sifted for traces of ancient grains in the remains of several Indus villages within a few kilometers of the site called Rakhigari.

They reckon their advanced farming techniques meant the Indus civilisation could support cities with massive populations of up to 40,000 people.

As well as the winter staples of wheat and barley and winter pulses like peas and vetches, they found evidence of summer crops: including domesticated rice, but also millet and tropical beans.

They used radiocarbon dating to provide the first absolute dates for Indus multi-cropping, discovering they began growing them around 2890-2630 BC for millets and winter pulses, and 2430-2140 BC for rice.

Millets are a group of small grain, now most commonly used in birdseed, which Petrie describes as 'often being used as something to eat when there isn't much else'.

Urad beans, however, are a relative of the mung bean, often used in popular types of Indian dhal today.

The variety of crops may have been transported to the cities, which would suggest that there was some sort of bartering system in place for people to trade services for food - like modern-day takeaways.

Urban hubs may have served as melting pots for produce from regional growers, as well as meats and spices, and evidence for spices have been found elsewhere in the Rakhigarhi region.

Dr Bates said: 'It is certainly possible that a sustainable food economy across the Indus zone was achieved through growing a diverse range of crops, with choice being influenced by local conditions.

'It is also possible that there was trade and exchange in staple crops between populations living in different regions, though this is an idea that remains to be tested.'

Dr Petrie added: 'Such a diverse system was probably well suited to mitigating risk from shifts in climate.

'It may be that some of today's farming monocultures could learn from the local crop diversity of the Indus people 4,000 years ago.'

Please visit the site: <http://www.dailymail.co.uk/news/article-3955780/World-s-curry-5-000-years-ago-Indians-eating-national-dish-Bronze-Age.html> [Go there for videos]

PATRA UNIVERSITY EXPERTS HELPING ESTABLISH LOCATION OF ANCIENT BYBLOS HARBOR, BY SAKIS IOANNIDIS

The green cedar tree at the center of Lebanon's flag is a symbol connecting the Eastern Mediterranean state with its ancient past.

Lebanon's cedars (*Cedrus libani*) are seen as sacred, not only because they are mentioned 77 times in the Bible, but also because they have greatly contributed to the country's economic growth. The cedar forests, with trees growing up to 40 meters in height and trunks of up to 2.5 m in diameter, are known to have provided timber for ancient Egypt, Israel and the Babylonians. It is said that the highly resilient wood was used for the construction of Solomon's famed temple.

Archaeologists believe that timber exports were shipped from the ancient coastal town of Byblos. Byblos, believed to be one of the oldest continuously inhabited cities in the world, is a UNESCO World Heritage Site.

Speaking to Kathimerini, Lebanese archaeologist Dr Martine Francis-Allouche said that experts had until recently failed to discover signs of a Bronze Age port in the ancient town of Byblos.

"After 17 years of field investigation in Byblos, which began in the 1960s by Honor Frost, a pioneer in the field of marine archaeology in Lebanon, the basin of the ancient port was finally located at the southern foot of the hill that hosted the ancient city," Francis-Allouche said.

Francis-Allouche and Nicolas Grimal, a French Egyptologist at the College de France, the two scientific supervisors of the "Byblos and the Sea" project, extended their survey to the sea in their effort to trace the ancient port. In doing so, they asked for help from a Greek university.

"From dawn to dusk we are in the sea. We plan the boat routes so as to form a dense canvas of courses to collect as much data as possible," said George Papatheodorou, professor of environmental and geological oceanography at the University of Patra's Department of Geology.

Papatheodorou recently returned from the latest mission in Lebanon. Over the winter, scientists will process the data they collected during the survey in order to draw up maps of the ancient port.

The university lab has 30 years of experience in the area of maritime geology and oceanography. It gained international recognition after its research in the sea area of Alexandria in Egypt and the Eastern Mediterranean. The Lebanon mission aims to document the coastal paleogeography of ancient Byblos during its heyday.

“We are very close to locating the ancient Byblos port. We are still not certain about its exact size and location,” said Papatheodorou.

Using the lab’s instruments, the small and flexible team headed by Papatheodorou and alternate professor Maria Geraga (with help from researchers Nikos Georgiou, Dimitris Christodoulou, Xenophon Dimas, Margarita Iatrou and Despina Zoura) will be able to record the seabed as if there was no water and delve beneath the surface to trace submerged formations now covered by sand due to geological or human intervention. By combining traditional archaeology with sciences, the maritime archaeologists will be able to see, as it were, the port of Byblos that reached its peak 6,000 years ago.

“It is a port that has been filled with debris. Part of it is under the land and another part lies under the sea. After its location has been established, archaeologists will launch test digs to unearth the port. We believe that it is buried a few meters beneath the sea floor,” said Papatheodorou.

The next mission of the project, which is subsidized by the Honor Frost Foundation, is scheduled for spring 2017. Then we may get the scientific evidence to determine the position of the ancient harbor from where the cedars of God began their journey to Egypt and elsewhere.

Please visit the site:

<http://www.ekathimerini.com/213862/article/ekathimerini/life/patra-university-experts-helping-establish-location-of-ancient-byblos-harbor>

GLASSMAKING MAY HAVE BEGUN IN EGYPT, NOT MESOPOTAMIA ARTIFACTS FROM IRAQ SITE SHOW LESS SOPHISTICATED TECHNIQUE, COLOR PALETTE, BY BRUCE BOWER

Ancient Mesopotamians have traditionally been credited with inventing glassmaking around 3,600 years ago. But Mesopotamians may have created second-rate knock-offs of glass objects from Egypt, where this complex craft actually originated, researchers reported November 19 at the annual meeting of the American Schools of Oriental Research.

Arguments that glass production originated in Mesopotamia largely rest on artifacts recovered nearly a century ago at Nuzi, a site in what's now Iraq. Glass finds there included colored beads, vessels and pendants.

It's unlikely those discoveries come from the dawn of glassmaking, said conservation scientist Katherine Eremin of Harvard Art Museums. She and an international team of colleagues, led by archaeologist Andrew Shortland of Cranfield University in England, determined that glass items excavated at Nuzi represent a mix of ancient Mesopotamian items and glasswork from later occupations, some as recent as the 1800s. Genuine Mesopotamian glassware comes from sediment recently dated to around 3,400 years ago, later than initially thought, Eremin added.

Comparably old Egyptian glass items display an array of colors, including red, green, yellow, opaque blue and translucent blue (SN: 1/24/15, p. 8). Some Egyptian glass features patterns of wavy, colored lines. Nuzi items from Mesopotamian times show a poorer grasp of glassmaking, Eremin said. Those remains consist mainly of beads, a majority of which are colored translucent blue. Wavy, colored lines on some beads are crudely formed and arranged.

"Nuzi glassmakers may have consciously copied Egyptian styles rather than leading the way in the glass industry," Eremin said.

Further study of ancient glass objects from other sites is needed to resolve the question of whether glassmaking originated in Egypt or the Near East, she said.

Please visit the site: <https://www.sciencenews.org/article/glassmaking-may-have-begun-egypt-not-mesopotamia>

METROPOLIS DISCOVERED IN ABYDOS IN THE UPPER EGYPT'S GOVERNORATE OF SOHAG A NECROPOLIS AND RESIDENTIAL SETTLEMENT WERE UNCOVERED IN ABYDOS IN SOHAG, ALMOST 400 KM SOUTH OF THE TEMPLE OF KING SETI I, BY NEVINE EL-AREF

A necropolis and residential settlement were uncovered Tuesday in Abydos in Sohag, almost 400 kilometres south of the temple of the New Kingdom pharaoh Seti I. The settlement and Early Dynastic Period necropolis were found during excavation by an archaeological mission from the Ministry of Antiquities.

Mahmoud Afifi, head of the Ancient Egyptian Antiquities Department at the Ministry of Antiquities, said that the newly discovered site could belong to high officials or architects responsible for the construction of the tombs and funerary walls of the pharaohs of the First Dynasty. Afifi described the discovery as "very important" because it reveals new information that could change archaeologist's understanding of the history of ancient Abydos.

Daily life instruments unearthed

Excavators also uncovered 15 large mudbrick tombs of varying architectural design. The surface area of each, Afifi said, could reach 70 metres -- larger than that of a First Dynasty royal tomb. "This size reflects the position of the tombs' owners -- their importance and social level within the community of that period," Afifi told Ahram Online.

He added that a group of mudbrick huts were also discovered within the settlement as well as a collection of artefacts from daily life, including the remains of a large number of clay vessels and stone tools used in land cultivation, which suggests that the huts could have belonged to workers supplying the settlement with provisions.

Remains of a hut uncovered

Yasser Mahmoud, the mission's field director, said that the uncovered tombs have a unique architectural design and one or more mastaba -- distinguished by flat roofs and sloping sides -- known only for pharaohs from the First and Third Dynasties at the Saqqara Necropolis. "This new discovery shows that the mastaba tombs were first used in Abydos for pharaohs from the First Dynasty," Mahmoud said.

Please visit the site:

<http://english.ahram.org.eg/NewsContent/9/40/250686/Heritage/Ancient-Egypt/Metropolis-discovered-in-Abydos-in-the-Upper-Egypt.aspx>