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Πληροφοριακό Δελτίο της Ελληνικής Αρχαιομετρικής Εταιρείας

- Φεβρουάριος 2018 -

There is nothing permanent except change. (Heraclitus)

Newsletter of the Hellenic Society of Archaeometry

- February 2018 -

Nr. 203

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ΣΥΝΕΔΡΙΑ - CONFERENCES/WORKSHOPS

24TH ANNUAL MEETING OF THE EUROPEAN ASSOCIATION OF ARCHAEOLOGISTS, REFLECTING FUTURES, CALL FOR PAPERS FOR THE SESSION BIOARCHAEOLOGICAL APPROACHES TOWARDS UNDERSTANDING DIET AND SUBSISTENCE, AND THEIR ROLE IN THE FORMATION OF EARLY SOCIETIES, BARCELONA, SPAIN, 5-8 SEPTEMBER 2018

Session Organisers:

Dr Benjamin Irvine (BIAA, Turkey) and **Dr Jennifer Jones** (University of Aberdeen, UK)

Session #224; Theme: Theories and methods in archaeological sciences

This session aims to bring together archaeologists from a range of bioarchaeological sub-disciplines researching dietary habits and subsistence practices of prehistoric populations. We are especially interested in researchers using osteoarchaeological, zooarchaeological, palaeoenvironmental, and stable isotope approaches towards answering questions about diet, past agricultural practices and animal management during this crucial period of time.

We encourage papers pertaining to the 5th-2nd millennia BC, a period which sees an intensification and specialisation of agriculture in conjunction with many other important cultural, economical, and societal changes. The differing approaches towards agriculture would have had socio-economical and socio-political repercussions. This period marks the advent of what might be deemed as recognisably ‘modern societies’, as well as the foundation of urbanisation. Understanding diet and subsistence practices are crucial to understanding the development of increasingly complex societies.

By examining the development of agricultural practices we can gain a better understanding of how populations were organised, in terms of labour divisions and resource provisioning strategies. We can also enhance understanding of how the local environment and climate affected populations and the decision making processes that helped populations counteract these natural factors. This session aims to directly address these issues and bring together scholars utilising contemporary theories and methodologies to approach this stimulating epoch of human development.

Please go to <https://www.e-a-a.org/EAA2018/> for more information about the annual meeting, including registration and abstract submission. The deadline for abstract submission is 15th February 2018.

If you have any queries or questions please contact Dr Benjamin Irvine at b.irvine@hotmail.co.uk

SYMPOSIUM: NEW LIGHT ON OLD METAL,
NATIONAL MUSEUM OF SCOTLAND,
SATURDAY 24 FEBRUARY 2018, 10:00 - 17:00

Bringing together national and international experts in the field of ancient metalwork, this symposium will showcase cutting edge forensic research into how and why metals should be preserved and interpreted. Full programme details at www.nms.ac.uk/metal

In partnership with Trimontium Museum Trust.

Tickets cost £40, £35 Members & Conc. and lunch is included. Book by calling 0300 123 6789, [online](#) or in person at any of our museum sites.

With very best wishes

Cassia

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**6TH INTERNATIONAL SUMMER SCHOOL IN
ANCIENT TECHNOLOGY, WHICH WILL BE
HELD IN THESSALONIKI (GREECE),
BETWEEN 02-13 JULY 2018**

Dear Colleagues,

Registration is now open for the 6th **International Summer School in Ancient Technology**, which will be held in Thessaloniki (Greece), between **02-13 July 2018**.

For applications and more information on the programme structure, please visit:
<http://web.ihu.edu.gr/atpd18/>

A great opportunity to experience both the history and culture of ancient Greece, as well as the superb Chalkidiki peninsula!

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**CONFERENCE 'BRONZE AGE TIN -
GEOLOGICAL SOURCES, PRODUCTION,
AND DISTRIBUTION OF TIN IN BRONZE
AGE EURASIA', 14 - 16 MARCH 2018,
MANNHEIM, GERMANY**

Dear colleagues,

I would like to draw your attention to the conference 'BRONZE AGE TIN - Geological sources, production, and distribution of tin in Bronze Age Eurasia' that will be held from 14 to 16 March 2018 in Mannheim, Germany. It is the final conference of our ERC funded project that aims on the provenancing of ancient tin by using tin isotopes. Besides the results of our own research, a lot of invited speakers will present the current state of knowledge on geological, archaeometallurgical and archaeological topics concerning tin. Everybody who is interested is invited to participate. The programme and registration form can be downloaded using the following links:

http://www.cez-archaeometrie.de/wp-content/uploads/2017/12/Programm_final.pdf

<http://www.cez-archaeometrie.de/>

We look forward to welcome you in Mannheim.

Best regards

Daniel

DIGITAL HUMANITIES AND RITUAL SPACE,
19-21 OCTOBER 2018, LABORATORY OF
GEOPHYSICAL-SATELLITE REMOTE
SENSING AND ARCHAEO-ENVIRONMENT,
RETHYMNON, CRETE

The second international meeting of the *Unlocking Sacred Landscapes* (UnSaLa) network, will be held from 19-21 October 2018 in the Laboratory of Geophysical-Satellite Remote Sensing and Archaeo-environment (Melissinou & Nikiforou Foka 130) at Rethymnon, Crete.

The meeting will focus on digital approaches both to ritual space and to artefacts relating to ritual practice and cult. The terms ritual and cult are used broadly to include sanctuaries, temples, and churches, as well as the domestic and funerary spheres of life. We particularly welcome papers with a strong methodological focus on computational developments, digitisation processes and spatial analysis. Although the main focus of the network is the Mediterranean region, we also warmly welcome relevant papers from colleagues working in other areas of the world, with a view to stimulating wider methodological dialogues and comparative approaches. The chronological range is also open, ranging from prehistory to the recent past, and including cultural heritage management.

In particular, we welcome archaeological, art-historical, anthropological, ethnographic, historical, computational, cultural heritage or inter-disciplinary papers dealing with:

- (1) inter- and intra-site Geographic Information System (GIS) approaches and spatial statistics and modelling of ritual space and/or its associated material assemblages,
- (2) digitisation and virtual reconstruction of ritual space and/or its associated material assemblages,
- (3) remote sensing\airial\satellite approaches to ritual space,
- (4) other computational methods and developments (e.g. space syntax and 3D modelling) applied to ritual space and/or its associated material assemblages,
- (5) digital approaches to culture heritage management and culture heritage studies of ritual space and/or its associated material assemblages,
- (6) digital approaches to phenomenological, performative and experiential analyses related to ritual space and/or its associated material assemblages.

Papers should be 20 minutes long. Posters may also be accepted. The official language of the workshop is English. Selected papers of the workshop will be published in the form of a peer-reviewed collection of studies and not as conference proceedings.

There will be a registration fee (60 euros) to cover coffee-breaks, one dinner, and an excursion on 21st of October.

Please submit a 300 words (maximum) abstract to papantog@tcd.ie by 30 March 2018. Notification of acceptance will be made by April 30th 2018.

Convenors:

Dr Giorgos Papantoniou (University of Bonn)

Dr Apostolos Sarris (Foundation for Research and Technology-Hellas)

Dr Christine E. Morris (The University of Dublin, Trinity College)

Dr Athanasios K. Vionis (University of Cyprus)

Further information: <http://www.ucy.ac.cy/unsala/workshops/rethymnon-2018>

Dr Giorgos Papantoniou

Research Training Group 1878: Archaeology of Pre-Modern Economies

Abteilung für Klassische Archäologie

Institut für Archäologie und Kulturanthropologie

Rheinische Friedrich-Wilhelms-Universität Bonn

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Germany

<http://www.wirtschaftsarchaeologie.de/en/persons/postdocs/dr-giorgos-papantoniou/>

Unlocking Sacred Landscapes Network:

<http://www.ucy.ac.cy/unsala/>

Facebook Page of the Network:

<https://www.facebook.com/unlockingsacredlandscapes/>

Academia webpage:

<https://uni-bonn.academia.edu/GiorgosPapantoniou>

2018 E-MRS SPRING MEETING AND EXHIBIT, STRASBOURG, FRANCE, 18 - 22 JUNE, 2018

Dear Colleagues,

The **2018 E-MRS Spring Meeting** and Exhibit will be held in Strasbourg (France) from the **18th to the 22nd of June 2018**. During this international Conference **Symposium CC** will be held on “**Cultural heritage-materials, techniques and knowledge perspectives on a common identity**”.

Since 2003, this event brings together different experts working in the field of Cultural Heritage, evidencing the importance of our historical legacy and that access, preservation and education on CH are essential for humankind evolution, representing an irreplaceable source of life, inspiration and unity.

The organization of this symposium is the natural outcome of the general need for further studies and research to better understand the dynamic relationship between heritage conservation and the various dimensions it involves, from Materials Science and Natural Science for CH, Digital Science, the use of advanced instrumentation and large scale Infrastructures, as well as implications of sustainable development, with particular attention to the effect on CH produced by natural hazards and climate change effects.

The European Commission strategically placed Cultural Heritage on the agenda by proposing the European Year of Cultural Heritage for 2018. Symposium CC addresses this challenge by being a common ground where best practices and solutions in the knowledge of arts, archaeology and ancient technology can be discussed, promoting a close cooperation between researchers, academia, professionals, students, policy makers and authorities for the understanding of our common memory and identity and its rich European, regional and local diversity.

We invite you to submit a contribution to the CC Symposium in all Cultural Heritage related matters.

Please check all information on the website <https://www.european-mrs.com/cultural-heritage-materials-techniques-and-knowledge-perspectives-common-identity-emrs> where you can find the hot topics of the symposium such as Current and emerging technologies, Large scale facilities (Synchrotron, neutron and ion beam), Non-destructive methodologies, New sustainable solutions, Multi-scale imaging, Monitoring environmental conditions, Modelling and Theoretical approaches, Authentication, Dating, Metrology, Climate changes, Hydro-geological and seismic risks, Remote monitoring, Maintenance and sustainability, Risk management, Case Studies, Social impact, Tourism and economy, Innovative protocols for CH, Best practices and legislation.

On behalf of the Organisers,

João Pedro Veiga

Chair Giuseppina PADELETTI (ISMN-CNR, Rome, Italy), with Co-Chairs João Pedro VEIGA (Universidade Nova de Lisboa, Portugal) and Michel MENU (C2RMF, Paris, France)

BRITISH SCHOOL AT ATHENS GREEK AND ROMAN POTTERY COURSE, 3-15 APRIL 2018

Dear Colleagues,

We would be grateful if you could help us circulate the advertisement for the British School at Athens Greek and Roman Pottery Course that will take place in 3rd-15th April 2018. <http://www.bsa.ac.uk/index.php/teaching/postgraduate/greek-and-roman-pottery>.

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. 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 Kostas 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), Dr Florence Liard (Williams Fellow in Ceramic Petrology, Fitch Laboratory), Dr Patrick Quinn (UCL Institute of Archaeology), Dr M. Giannopoulou (University of Crete) and Dr Denitsa Nenova (UCL Institute of Archaeology). 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 Research 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. 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 Kostas S. Christakis by **15th February 2018** (knossoscurator@bsa.ac.uk). For further information contact the course coordinator Dr Kostas S. Christakis (knossoscurator@bsa.ac.uk).

All the best

Kostas S. Christakis

**CALL FOR PAPERS - ASOR ANNUAL
MEETING, DENVER, CO – NOV. 14-17, 2018,
DEVELOPING ISOTOPIC INVESTIGATIONS
IN THE NEAR EAST & CAUCASUS**

CHAIRS: G. Bike Yazicioglu-Santamaria and Maureen E. Marshall

SESSION DESCRIPTION: In the last decade, biogeochemical analysis has gained pace in the archaeology of the Near East and Caucasus, allowing fine-grained interpretations of mobility patterns, subsistence, diet, and infant-feeding practices in past human societies. Now embracing a holistic understanding of human ecology, isotopic research in the region is in a stage of expansion with a growing diversity of research questions (ranging from crop water management to spread of millet cultivation and from climate change to human adaptation to climate change).

Following the objectives set in our previous sessions in ASOR 2016 and 2017 Annual Meetings, our 2018 session seeks to bring together research papers that utilize various biogeochemical methods and target a wide diversity of questions. For the 2018 session we are soliciting papers on the results of new and ongoing analyses on diet, mobility, and beyond, as well as regional overviews/syntheses, revised interpretations, and/or methodological discussions that utilize previous datasets. Papers that propose new methodological, interpretative, and thematic frameworks and/or new sampling strategies, lab procedures, and instrumental techniques in isotopic analyses are particularly welcome.

ABSTRACTS (due February 15 and 250 words or less) can be submitted via ASOR's Online Abstract Management System at:

<https://app.oxfordabstracts.com/login?redirect=/stages/453/submission>.

Please note that professional membership

(<http://www.asor.org/membership/individual-memberships/#regular>) and registration (<http://www.asor.org/am/2018-registration/>) for the Annual Meeting are required at the time of abstract submission.

ROUND TABLE: We are also looking forward to holding a second brief Round Table for our Isotopic Research in Near East and Caucasus Working Group (under ASOR Business Meetings). Please RSVP if you would like to attend the round table to allow us sufficient time to reserve a place and time (2 hours) on the Annual Meeting Schedule. Please contact Bike Yazicioglu-Santamaria at gbikeyaz@gmail.com for further details and round table reservations.

**WHAT'S MINED IS YOURS: MAKING THE
MOST OF OUR METALLURGICAL
HERITAGE, HMS AGM AND BM JOINT
CONFERENCE, SATURDAY 16 JUNE 2018,
BRITISH MUSEUM - STEVENSON LECTURE
THEATRE, CALL FOR PAPERS**

Dear Colleagues,

New submission deadline: February 28, 2018

The study of historical and archaeological metallurgy is arguably at a turning point, having evolved out of the shared interests of industrial metallurgists, geologists, and archaeologists, it has coalesced into a discipline in its own right. Contemporary research is now unravelling ever more information embedded within metallurgical remains, from the aesthetic significance of objects to the valuable material information contained within degradation and manufacturing waste products holding socio-cultural insights about trade and technologies. Helped along by technological advances, these new interpretative techniques have not been exclusively driven by esoteric academic pursuits but equally so by an increasing public awareness of the value of our metallurgical heritage. This is due to a confluence of social, political, and economic changes happening over the last few decades. Indeed, the normalising of metal detecting in many countries, the rising popularity of archaeology in the mainstream media, and the continued onward march of urban development highlighting the threat to a rapidly disappearing industrial landscape have all played a role in altering political and public perceptions of what constitutes valuable heritage. The challenge now lies in managing the ever expanding mountain of material, landscapes, and data available while simultaneously catalysing this wave of public interest to help preserve our metallurgical past.

The British Museum and the Historical Metallurgy Society would like to invite submissions for papers and poster presentations for this one day conference and the Society's AGM on the topic of the archaeology, conservation, analysis, and/or presentation of metallurgical heritage. A broad interpretation of this topic is welcomed, as are submissions from related fields, but we particularly encourage discussion within the following themes:

- New approaches to the analysis and conservation of metallurgical remains and metallic objects
- Metallurgy, metals, and museums
- Metallurgical and industrial landscapes
- Public involvement and engagement

Abstracts for oral 20 minute and poster presentations should be:

- 250 words maximum in Word format

- Include the name and affiliation of all authors (presenting author in bold)
- Sent to hmsagmconf@hist-met.org
- **Submitted by 28 February 2018**

For more information, please contact:

Loic Boscher - lboscher@gmail.com

Aude Mongiatti - amongiatti@britishmuseum.org

**23RD INTERNATIONAL RADIOCARBON
CONFERENCE, TRONDHEIM, JUNE 17-22,
2018, NATIONAL LABORATORIES FOR AGE
DETERMINATION, NTNU UNIVERSITY
MUSEUM**

The 23rd International Radiocarbon Conference will follow the traditional format. The conference will last 5 days, from Monday June 18 to Friday June 22, 2018, with social events in the evening, including an ice breaker on Sunday evening June 17 and connecting workshops and excursions.

Workshops for users of Ionplus and NEC systems will take place on Sunday June 17. Other workshops may be arranged on demand.

Web site: www.ntnu.edu/radiocarbon2018

Correspondance: radiocarbon2018@ntnu.no

Venue and accommodation:

The conference will take place at the Scandic Lerkendal hotel in Trondheim.

(<https://www.scandichotels.com/hotels/norway/trondheim/scandic-lerkendal>).

Participants are free to seek accommodation at the hotel of their choice, however, a block of rooms has been reserved at reduced conference rates at the Scandic Lerkendal and at the Scandic Bakklandet. These rooms should be reserved on the Scandic hotels web site (www.scandichotels.com), by email to lerkendal@scandichotels.com, or by phone +47 21 61 51 00. The booking code for the rooms is BNTN170618.

Registration and abstract submission:

Registration and abstract submission can be done online at the conference web site available from February 16.

Proceedings:

The proceedings will be published in the journal Radiocarbon (<http://radiocarbon.org/>).

Deadlines:

- February 16: Opening of registration and submission of abstracts
- March 20 :Closing of abstract submission
- May 1: End of early bird (reduced price) registration
- May 1: Release of the rooms reserved for the participants at the Scandic hotels. The reduce price will apply after this date but rooms might not be available.
- August 31: Deadline for paper submission

Topics:

The conference will have plenary and parallel sessions on selected topics. The detailed selection of topics will depend on the abstracts submitted.

These include:

- Developments in measurement techniques and sample pre-treatments
- Calibration and calibration records
- Radiocarbon measurements of specific compounds
- Applications in archaeology
- Carbon cycles (e.g. soils, aquatic systems)
- Radiocarbon as a natural tracer
- Bio-medical applications
- Radiocarbon reservoir effects (both fresh and ocean reservoirs)
- Other cosmogenic nuclides

We invite proposals of additional session topics. Please submit them to the conference email address or to marie.nadeau@ntnu.no or martin.seiler@ntnu.no.

THIRD INTERNATIONAL RADIOCARBON IN THE ENVIRONMENT CONFERENCE (REI- III), GLIWICE, POLAND, SUMMER 2020

The Third International Radiocarbon in the Environment Conference (REI-III) will be held in Gliwice, Poland, in summer 2020.

The meeting will be hosted by the Institute of Physics - Centre for Science and Education, Silesian University of Technology.

To view the most recent information we have on upcoming conferences, please visit the Radiocarbon website at <http://radiocarbon.webhost.uits.arizona.edu/> and click on the Announcements tab.

Kim Elliott

Radiocarbon Managing Editor

ΘΕΣΕΙΣ ΕΡΓΑΣΙΑΣ/ΥΠΟΤΡΟΦΙΕΣ –
JOB VACANCIES/FELLOWSHIPS

JOB OPENING: POSTDOC POSITION - IRON
AGE IRON SMELTING

Dear All,

Looking for new opportunities for the new year??

As part of a new research frame funded by the Israel Science Foundation “Early Iron (Iron Age I-IIA) Smelting in the Southern Levant; Technological Aspects” we are opening a Post-doctoral position.

(Possibilities for MA/MSc/PhD may also exist).

The aim of the proposed research is to investigate the apparent diversity in iron production and smelting technologies during the Iron Age II (late 10th-early 9th C. BCE) in the southern Levant. The research will focus on the reconstruction of smelting techniques including the choice of raw materials, the type of smelting installations used and the type of slag produced. The project is interdisciplinary by nature and will involve geochemists, archaeologists, archaeometallurgists and professional iron smelters, and will be coordinated by the PI – Dr. Adi Eliyahu-Behar.

The Post-doctoral Fellow will be expected to be part of the team, responsible for planning, conducting, and analyzing the results of several experimental smelts, using local available ore sources. The successful candidate should have a proved experience in the field of archaeometallurgy (preferably of iron/steel), knowledge of sample preparation, chemical and microscopic characterization of ores, slags, refractory ceramics and a like using various analytical methods.

This is a full time, two-year position situated at Ariel University, Israel, starting September 2018 (or earlier).

For more details, please contact: Adi.eliyahu17@gmail.com

Please distribute to potential students

Many thanks and greetings for the new year,

Adi

Adi Eliyahu-Behar, Ph.D
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ΑΝΑΚΟΙΝΩΣΕΙΣ - ANNOUNCEMENTS

£500 ACADEMIC WRITING PRIZE – SUBMISSION DATE REMINDER

The submission deadline for this year's SMG journal writing prize is 1st March 2018. The prize aims to encourage writing and publication by early career scholars, and winners will receive £500 and the chance to publish in the SMG Journal. Winning entries will be judged according to best original research article that addresses research questions in the history of science and technology, material culture, heritage, exhibitions, or science engagement.

Submission is open to all researchers in the early stages of their academic career – whatever their age – and we aim to publish the winning article in the Journal. More details are on the Journal site here <http://journal.sciencemuseum.org.uk/smg-journal-writing-prize/> – so do spread the word and send submissions (or enquires) to the editorial staff at richard.nicholls@sciencemuseum.ac.uk

The winning articles for 2017 were published in issue 08 of the Journal: <http://journal.sciencemuseum.org.uk/issues/autumn-2017/>. Our congratulations go to Joshua Butt (Manchester Metropolitan University) for 'Adapting to the emergence of the automobile: a case study of Manchester coachbuilder Joseph Cockshoot and Co. 1896–1939' and John Kannenberg (University of Arts, London) for 'Towards a more sonically inclusive museum practice: a new definition of the sound object', and also to Jean-François Fava-Verde (University of Leeds) whose article - 'A tale of two telegraphs: Cooke and Wheatstone's differing visions of electric telegraphy' - was recommended for publication by the judging panel.

SUMMER 2018 FIELD SCHOOL, THE SAN GEMINI PRESERVATION STUDIES PROGRAM

We are now accepting applications for our summer 2018 field school, the **San Gemini Preservation Studies Program**.

Now in its 20th year, with alumni from over 170 colleges and universities worldwide, SGPS is dedicated to the preservation of cultural heritage. We offer students the opportunity to study and travel in Italy where they acquire hands-on experience in preservation and restoration.

Session One (May 28 – June 22)

Building Restoration – Touching the Stones

Restoration of Traditional Masonry Buildings and Sketching & Analyzing Historic Buildings

(Program includes lectures and restoration field projects*)

Archaeological Ceramics Restoration

Analysis and Restoration of Archaeological Ceramics in Italy

(Program includes lectures and restoration workshop)

Book Bindings Restoration

The Craft of Making and Restoring Book Bindings

Introduction to the Conservation of Books and Bindings

(Program includes lectures and practical workshop)

Session Two (July 9 - August 3)

Paper Restoration

Restoration and Conservation of Paper in Books and Archival Documents

(Program includes lectures and restoration workshop)

Traditional Painting Techniques

Traditional Materials, Methods of Painting and Art Restoration Issues

(Program includes lectures and painting workshop)

Preservation Theory and Practice in Italy

Restoration Theory, Ethics and Issues

(Program includes lectures and discussion)

NEW RESEARCH PROJECT: Carsulae Roman Baths Excavation Project

Architectural & Structural Survey of the Site

(Program includes research and surveying field work*)

***Field Projects:**

Restoration of the façade of the medieval church of San Carlo (13th century)

Analysis of medieval buildings in San Gemini as part of an urban study of the city

Architectural and structural survey of the baths in the ancient Roman city of Carsulae

Short Inter-Session Program

Preservation Field Trip – Italy (June 24 – July 3)

A ten-day trip visiting Siena, Florence and Rome: places of cultural interest, the urban and historical development of each town, and specialized visits to places of interest to restorers.

To find out more about our program and review the syllabi, please visit our [WEBSITE](#).

Our courses are open to students from various disciplines, both undergraduate and graduate. All lessons are taught in English.

Deadline for applications is March 15, 2018.

OSCAR BRONEER TRAVELING FELLOWSHIP, 2018-2019

Deadline: March 15, 2018

The American Academy in Rome and the American School of Classical Studies at Athens award the Oscar Broneer Traveling Fellowship to encourage the study of the Greco-Roman world.

Purpose: The Fellowship will be awarded for research in Greece and Italy in alternate years. It is expected that the Fellow will use either the American Academy in Rome (AAR) or the American School of Classical Studies at Athens (ASCSA) as a base from which to pursue work through trips to sites, museums, or repositories of materials relevant to the Fellow's research.

Eligibility: Individuals who have spent a year as a Fellow of the ASCSA are eligible for this Fellowship based at the AAR and for research based in Rome and Italy. For the **fellowship year of 2018-2019 applicants previously at the ASCSA and wishing to conduct research in Italy will be accepted.** Candidates must have an approved dissertation proposal or, if they already hold the Ph.D., they should be at the beginning of their teaching career and without tenure. Projects may focus on any period of study in the humanities, although preference will be given to topics dealing with classical antiquity.

Terms: The Fellowship is awarded to one individual per year. It may be held at any time during the 2018-2019 academic year for a minimum of three and a maximum of six months. The award is for a maximum of \$30,000, and is meant to cover expenses including housing at the host institution, travel (only one round-trip excursion from home base in U.S. or Europe to Rome and travel within Italy will be funded), and living expenses. Support from the host institution includes access to research facilities, assistance with obtaining permissions, passes to state museums and monuments, letters of introduction, invitations to various scholarly and other events, and access to other activities offered by the host institution. The award amount will be determined by the applicant's approved budget. Applicants are urged to explore supplementary sources of support. A final report is due at the end of the award period, and the AAR and ASCSA expect that copies of all publications that result from research conducted at AAR and ASCSA be contributed to their libraries.

Application: The application will consist of the candidate's curriculum vitae, a detailed research proposal, a plan for travel connected with the project, a budget for all expenses including travel, housing, food, fees, and other living expenses, and proposed dates. Applicants will need to consult with the host institution for costs associated with housing, food, and fees. The selection committee, in evaluating the candidate's proposal, will determine how reasonable and relevant the travel plan and budget appear in relation to the proposed research and the period of time requested for the Fellowship.

Submit all application materials, including three letters of recommendation to the

American Academy in Rome. Materials may be sent via email to Shawn Miller, Program Director at s.miller@aarome.org, or via ground mail addressed to Oscar Broneer Traveling Fellowship, c/o American Academy in Rome, 7 East 60th Street, New York, NY 10022.

Web site: <http://www.aarome.org>

The award will be announced in spring 2018.

For more information on the ASCSA website: <http://www.ascsa.edu.gr/index.php/admission-membership/Graduate-and-Post-Doctoral>

INTERNET SITES

PLANTCULT

PLANTCULT is an ERC funded project (Consolidator Grant, Horizon 2020 Research and Innovation Program, Grant Agreement No 682529) that aims to explore prehistoric cuisines of Europe, in particular their plant ingredients and their transformation into meals. Our five year project (2016-2021) brings together plant remains, food remains, cooking pots and installations, grinding equipment and cooking processes, from the Aegean to Central Europe, in an attempt to decipher culinary practices and identities from the first farming communities to the first cities that emerged at the end of the Iron Age.

Please visit the site:

https://www.youtube.com/watch?v=JU6dM3_h7m4&feature=youtu.be and
<https://www.facebook.com/PlantCult/>

A DIGITAL INTRODUCTION TO GREEK HERITAGE BY ATHENS UNIVERSITY, BY ELEFThERIA TRAIU

Created in Greece...
Addressed to the World

Total Travel Experience: Explore, Travel, Learn.

Get inspired, encounter past and present, discover world famous destinations around Mediterranean Sea or gain authentic Mediterranean experiences and reward yourself with a virtual or real mosaic of original Greek spirit.

It's no secret that the internet is changing the way we travel. So much so that international online travel platforms are racing to meet the demands of tomorrow's travelers as they search for their next destination.

Providing reliable information has always been key, but, increasingly, an appealing presentation seems to be the secret to capturing people's attention. Music, online tours, panoramic images, videos and interviews allow the user to digitally experience a destination before they travel.

For these online platforms to survive, they need to offer something special, which is exactly the case with the interactive website YouGoCulture. Created by Athens University, YouGoCulture provides a digital introduction to Greek culture and heritage.

The site is designed for international visitors to Greece and is entirely in English. It has been operational for almost a year, currently offering nine digital destinations: Mystras, Lavrio-Sounio, Elefsina, Marathon, Mycenae, Ancient Olympia, Messene, Epidaurus and Athens. Five more are set to be added in the near future (Limnos, Delos, Knossos and Delphi), while another 16 are in the pipeline.

The project has the support of Athens University Rector Thanos Dimopoulos and is funded by the institution's Supplementary e-Learning program, through which many of its entries are evaluated. Kathimerini asked the man in charge of yougoculture.com, Panagiotis Petrakis, a professor of economics at the university, how the website came about.

"We had the idea in 2016, when we started using online education programs from around the world, in English. We realized the programs with the highest demand were those that showcased Greek civilization, which inspired us to develop a side project with which we would explore how to familiarize foreign visitors with Greek culture. We should add that among the destinations under development are Syracuse in Sicily, Odessa in Ukraine and Alexandria in Egypt, as YouGoCulture is interested in covering the full breadth of Greek civilization, traveling to places of interest around the world where the Greeks put down roots and left their mark," he said.

“It is for this reason that we are reaching out to people of Greek heritage abroad, as we are doing with the local communities of proposed locations within Greece, looking for collective support,” Dimopoulos added.

The website’s advantage over the competition is the guaranteed reliability it has as a project by the university, as well as its pleasing presentation and interesting features. The team leading the project, among whom are professors of classical archaeology Vassilis Lambrinouidakis and Petros Themelis, and theater studies professor Platon Mavromoustakos, makes sure the project only works with reliable partners.

It should be pointed out that all the content used by YouGoCulture is original, created for the website. This includes the texts, images, 360-degree panoramas and the many videos by director Elpida Skoufalou. The videos are beautifully composed, while taking great care as to the way both monuments and people are depicted. With short interviews, YouGoCulture also shows aspects of modern life in the destinations proposed. The site features music composed by Elias Pierrakos and includes an interactive map with which to navigate the various locations.

YouGoCulture is nonprofit, fully funded by the university and donations raised via a crowdfunding campaign. It is also supported by Act4Greece, a National Bank of Greece initiative aimed at promoting social and developmental banking which coordinates with a number of institutions, such as the Alexander S. Onassis Public Benefit Foundation, the John S. Latsis Public Benefit Foundation, the Bodossaki Foundation, the Hellenic National Commission for UNESCO, and the Hellenic Network for Corporate Social Responsibility.

We asked professor of media organization and policy and media adviser Stylianos Papathanassopoulos what kind of reception the project has received. “The traffic our website is getting is remarkable, especially considering that our advertising campaign to date has depended only on word of mouth and people sharing on social media. YouGoCulture has become well known because people want to talk about it and share it with their friends, and I think that shows how successful it is. We know the project resonates with people because our funding is increasing thanks to donations through the Act4Greece program, which most Greeks don’t even know about,” he says.

Papathanassopoulos also appreciates that the creation of YouGoCulture “is an activity that contributes to the university’s efforts to address the community, the ultimate critic, judging whether it has a positive, negative or neutral impact.”

“Reaching as many people as possible has to be the university’s main goal, not just to ensure continued funding, but also to adapt to the modern culture landscape,” he says.

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Please visit the site: <https://yougoculture.com/>

TRISMEGISTOS WORDS: NEW TOOL FOR SEARCHING DOCUMENTARY PAPYRI, BY PETER M. HEAD

There is a new tool in town for searching morphological analysis of 5 million words in the Duke Database of Documentary Papyri. I've only been able to have a brief play around so far (on ἀθηντέω which has only five occurrences [4 of which are very late]), but I thought you might be interested to hear about this and try it out.

Trismegistos is pleased to announce a new database: TM Words www.trismegistos.org/words.

It contains the just under 5 million words contained in the Duke Database of Documentary Papyri. The new database is the result of work by Alek Keersmaekers, who started from the XML-version available on GitHub on 19 September 2016. He used a stochastic machine-learning approach for tokenisation, part-of-speech-tagging and lemmatization [I had to look all of these up too ;-)]. The accuracy is about 95%, which seems high, but also means that there are still about 250,000 errors of morphological interpretation in the database, some of which very obvious for humans. We would be very grateful if you would communicate errors you notice by giving us a 'thumbs-down' and clicking the icon after each attestation. On the basis of that feedback we can improve the database further.

We have made the online version as user-friendly as possible, with many possibilities for filtering and automated weighed-dates charts. This obviously is very demanding for our server, and we hope that the system won't crash as a result. In any case for some large datasets (very common words) you may need to wait half a minute or more.

A special feature is the possibility to look for attestations of words in specific genres of texts. This is only possible through cooperation with Joanne Stolk, who has undertaken a rough classification in the margin of her work on TM Text Irregularities.

Finally: all of this is only possible thanks to the existence of the DDbDP and papyri.info. In the future we hope to work together with them to share all information and make the lemmatisation available there as well. This will be a non-trivial matter, because of the dynamic nature of the text in the DDbDP. Nevertheless it is an urgently needed effort to prevent the creation of multiple versions of the same text. For that reason we will share all corrections as much as possible, and new readings should of course continue to be entered through the Papyrological Editor.

Please visit the site:

<https://evangelicaltextualcriticism.blogspot.co.uk/2018/01/trismegistos-words-new-tool-for.html>

ΝΕΕΣ ΕΚΔΟΣΕΙΣ – NEW PUBLICATIONS

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**NEOLITHIC THESSALY: RADIOCARBON
DATED PERIODS AND PHASES,
DOCUMENTA PRAEHISTORICA, VOL 44,
2017**

Agathe Reingruber, Giorgos Toufexis, Nina Kyparissi-Apostolika, Michalis Anetakis,
Yannis Maniatis, Yorgos Facorellis

Abstract

Thessaly in Central Greece is famous for settlement mounds (magoules) that were already partly formed in the Early Neolithic period. Some of these long-lived sites grew to many metres in height during the subsequent Middle, Late and Final Neolithic periods, and were also inhabited in the Bronze Age. Such magoules served as the backbone for defining relative chronological schemes. However, their absolute dating is still a topic of debate: due to a lack of well-defined sequences, different chronological schemes have been proposed. New radiocarbon dates obtained in the last few years allow a better understanding of the duration not only of the main Neolithic periods, but also of the different phases and sub-phases.

Keywords

Thessaly; Neolithic; radiocarbon dates; absolute and relative chronology

Please visit the site:

<https://revije.ff.uni-lj.si/DocumentaPraehistorica/article/view/44.3>

EΙΔΗΣΕΙΣ - NEWS RELEASE

A FRAGILE BIBLICAL TEXT GETS A VIRTUAL READ, BY NICHOLAS WADE

In a basement laboratory of the Morgan Library and Museum in New York, an X-ray scanner is pumping invisible beams into a clump of charred parchment leaves that looks as delicate as a long dead flower.

The leaves are the remains of a severely scorched early book, or codex, which was written in southern Egypt some time between 400 and 600 A.D. It contains the Acts of the Apostles, one of the books of the New Testament, possibly bound with another work. The writing is Coptic, the language of Egypt before the Arab conquest in 642 A.D.

The charred codex was purchased by the Morgan Library in 1962. But no one has opened it for fear of destroying it: The brittle pages have been fused together by a cinder that sank through much of the book, congealing the parchment fibers. Unlike famous codices that have their own names, like the Codex Sinaiticus, this one is known humbly as M.910, its accession number at the library.

But having lain in obscurity for half a century, M.910's day in the limelight has finally arrived. Last month, a television news crew documented every movement of the little codex and of its two new enthusiasts: Paul C. Dilley, an expert on early Christianity at the University of Iowa, and W. Brent Seales, a computer scientist at the University of Kentucky.

Dr. Seales has spent 14 years developing a technique for reading ancient scrolls that are too fragile to unwrap. Fine-detail CT scanners can visualize the ink of letters inside such scrolls, but the alphabet soup is unreadable unless each letter can be assigned to its correct position on a surface.

Dr. Seales has developed software that can model the surface of a contorted piece of papyrus or parchment from X-ray data and then derive a legible text by assigning letters to their proper surface.

He scored a spectacular success in 2016 when he virtually unwrapped a small charred lump of material from En-Gedi in Israel. It turned out to be an ancient Hebrew scroll that contained the earliest known instance of the Masoretic text, the most authoritative version of the Hebrew bible.

His technique, Dr. Seales said, "can turn things thought to be of no value into precious objects."

It was after hearing Dr. Seales lecture in January that Dr. Dilley asked him to try the technique on M.910.

Dr. Seales had not tackled a codex, which unlike a scroll has writing on both sides. Tests with a parchment mock-up constructed at Dr. Dilley's request suggested that the technique would work.

But Maria L. Fredericks, the Morgan Library's head book conservator, had determined that the little codex was unfit to travel. She displayed a loose page and a dish of small fragments that have dropped off the charred edges since its purchase. So Dr. Seales borrowed a small CT scanner that was brought to the library.

Dr. Dilley, a scholar of Coptic, hopes to discover what work the Book of Acts is paired with in the codex, which may help shed light on the formation of the New Testament canon. There was a profusion of gospels and other writings in the early Christian era, and it wasn't until 367 A.D. that the approved canon, the familiar list of books in the Old and New Testament, was specified by Athanasius, the bishop of Alexandria.

Egypt was a major center of Christianity in the pre-Islamic world, and the bishops of Alexandria held great sway, second only to the bishop of Rome, in matters of church doctrine and practice.

Even so, it took many years for the familiar New Testament canon to edge out rival Gnostic and Manichaean writings. Because of the expense of producing books, complete versions of the New Testament, such as in the Codex Sinaiticus, were rare, and Christian Coptic manuscripts often feature only selections, such as the four gospels or the epistles of Paul.

Though earlier texts of Acts exist, M.910 will be of interest if it has its own set of variants. These, together with variants in other texts, could help scholars reconstruct the text of the original Greek source.

The scans were completed in December, and the team hopes to start producing readable pages later this month. If successful, Dr. Dilley said, there are damaged codices all over the world that one day may yield their secrets.

Please visit the site: <https://www.nytimes.com/2018/01/05/science/biblical-codes-morgan-library.html>

ARCHAEOLOGISTS FIND HUGE PREHISTORIC 'PICNIC SPOT' FROM HALF A MILLION YEARS AGO IN ISRAEL, BY ARIEL DAVID

Trove of advanced flint tools unearthed in central Israel indicates hominids developed modern thought patterns well before they physically evolved into modern humans

Archaeologists excavating an ancient river bed in Israel have uncovered a vast prehistoric site where, half a million years ago, early humans created a hoard of elaborate flint tools that suggest their cognitive abilities were much closer to our own than previously thought.

Hundreds of thousands of artifacts have emerged since archeologists first stumbled upon the site last year while surveying an area slated a new neighborhood in the nearby Arab-Israeli town of Jaljulia.

Given that Israel is littered with archaeological remains from the dawn of man onwards, all new construction sites are explored by experts before building can begin.

“Usually in these surveys, you dig down a meter or two and go home,” says Lena Brailovsky, the Israel Antiquities Authority archaeologist who discovered the site. “But we knew that in open fields that are close to a river, we could expect to find prehistoric sites. We knew there was something here and we didn’t give up.”

A perfect spot for humans

Brailovsky bulldozed her way to a depth of more than five meters until hitting paydirt: layer upon layer of tools and animal bones littering the open-air site.

Tel Aviv University archaeologist Ran Barkai shows a sections of sediments filled with pieces of flint and tools at a prehistoric site in Jaljulia. Ariel David

Since that discovery, in November 2016, the IAA and Tel Aviv University have been conducting a massive salvage excavation in a mad dash to learn as much possible from the site before construction work is greenlighted. Mounds of sediments have been removed over an area of about a hectare, uncovering at least six distinct sub-sites along the once-marshy banks of a stream that flowed through what is today the West Bank and central Israel.

“It was a perfect spot for humans,” says Ran Barkai, an archaeologist from Tel Aviv University. “The water brought flint nodules from the hills, which were used to make tools on the spot, and it attracted animals, which were hunted and butchered here. They had everything that prehistoric people needed.”

The dig may have only scratched the surface. There may be many more such “prehistoric mega-sites” around the Qana, now a seasonal stream that lies to the south of Jaljulia, Barkai says.

“Over time, the water changed course and the people moved with it. That’s why there are so many different sites,” Barkai told Haaretz during a recent visit. “It was like a prehistoric picnic spot, which people would return to over and over again.”

Homo erectus, inventor of the 'Swiss army knife'?

Based on the tools found at the site and early tests on the paleomagnetism of the sediments, the site has been tentatively dated to around half a million years ago, and attributed to *Homo erectus*, the species of hominid most likely to have that inhabited the area at the time.

Erectus was most probably our direct ancestor, and is believed to have been the first hominid to leave Africa around 1.8 million years ago and spread through Eurasia. Firmer proof of the timing of the Jaljulia site awaits the results of dating tests for the layers of human habitation using optically stimulated luminescence, a method that can tell how long quartz grains have been out of sunlight (i.e., when they were buried).

Many of the artifacts found in Jaljulia are typical bifacial handaxes – Barkai jokingly calls them the “Swiss army knife of the Paleolithic” – which were all-purpose tools produced for more than a million years around the prehistoric world, with minimal changes.

But here’s the rub: mixed in amongst the multitude of handaxes, archaeologists also found flint tools produced using an early form of a different, much more complex technique.

This method, known as the Levallois technique, requires much more work and advanced planning, Barkai says.

The Levallois mystery

traditional handaxes were made by slowly hammering a piece of flint into a desired shape, Levallois tools were produced in two stages.

First, the flint core was carefully knapped into a specific shape.

Then, with one decisive stroke, the knapper would detach a flake that already had the form and size of the desired tool.

“It requires a conceptual leap that allows you to envision the desired tool in the flint core before you even start shaping it,” Barkai says.

This technique yields longer and thinner flakes, and may have been developed because hominids were starting to attach tools to wooden shafts, rather than just bludgeon away at things with their handheld axes, the archeologist speculates.

The Levallois technique was long thought to have been developed among more advanced hominids, Neanderthal and *Homo sapiens*, and to be the result of a decisive leap forward in our biological and technological evolution.

But Jaljulia – as well as the recent discovery of similar sites in Asia, Europe and Africa – is too ancient to be attributed to anatomically modern humans, Barkai says.

“There is a big discussion on the Levallois technique, when it was invented and whether there is a connection between physical evolution and technological evolution,” he says.

Such discoveries are likely to fuel the debate on questions that lie at the heart of prehistoric research: When did we stop being monkeys and become humans? What is it that makes us human, and how did we gain those nearly-ineffable qualities? And barring divine intervention (or a big black monolith), did this happen thanks to biological evolution or cultural development?

Already in 2014, research published in the journal *Science* focused on a mix of handaxes and Levallois tools found in a gorge in Armenia that dated to more than 300,000 years ago. The study concluded that this co-occurrence of tools suggests the more advanced technique was not suddenly introduced by the arrival from Africa of a new, smarter hominid, but evolved locally out of previous methods.

If the dating of the Jaljulia site is confirmed, it would move the clock further backwards on a key technological milestones in our evolution – and one that most probably we *Homo sapiens* cannot claim as our own.

The advanced cognitive abilities required to make those tools would even predate the controlled use of fire, meaning fire that the hominins ignited themselves, as opposed to helping themselves to brushfire ignited by lightning. According to Barkai, there may be some evidence of sporadic use of fire at Jaljulia, but the earliest evidence of a sustained and controlled blaze was found at Qesem cave, less than 10 kilometers away – but dated to 100,000 years later.

(Some archaeologists believe control of fire was achieved in Gesher Benot Yaakov, in northern Israel, as much as 800,000 years ago.)

Maayan Shemer, the IAA archaeologist leading the dig, says the team will work with city planners to strategically locate public gardens and other open spaces over the most promising areas, in hopes that one day researchers will be able to return to Jaljulia to renew their explorations.

Archaeologists closed the dig in December. The site is expected to be covered so that construction on the new neighborhood can begin. “On one hand, it’s sad to bury such an important find, on the other, if they hadn’t planned a new neighborhood, we might have never have known it was here,” Barkai says.

Please visit the site: <https://www.haaretz.com/archaeology/1.825168>

ANCIENT DNA SAID TO SUPPORT BIBLE'S BABEL ACCOUNT, BY DAVID ROACH

Ancient human genetic material harvested in Alaska has been cited by two creation researchers as corroborating evidence of Scripture's claim humans migrated en masse from the Tower of Babel.

A study published Jan. 3 in the journal Nature claims DNA extracted from the remains of an infant girl buried in central Alaska suggests an ancient migration of people from East Asia, across a frozen land bridge, to North America.

After scientists extracted the DNA, they dated it to approximately 11,500 years ago, according to common evolutionary dating methods, and discovered commonalities between the harvested genome and the DNA of modern Native Americans. Researchers also found the ancient infant girl had ancestors in East Asia some 35,000 years ago according to evolutionary dating methods.

The finding marks the second oldest human genome ever discovered in North America, The New York Times reported.

Nathaniel Jeanson, a Harvard-trained research biologist with Answers in Genesis (AiG), told Baptist Press the dating of the Alaska DNA seems to be inaccurate. But other details of the find, he noted, corroborate the account in Genesis 11 of mass human migration following attempted construction of the Tower of Babel.

The Nature study, Jeanson said, is "more evidence for people in the Americas from Asia -- East Asia, Central Asia" and "is consistent with Scripture."

The biblical book of Genesis reports that rather than heed God's command to "spread out over the earth" (Genesis 9:7), humans -- who all spoke a single language at the time -- settled in the Ancient Near Eastern land of Shinar and attempted to build "a tower with its top in the sky" (Genesis 11:4). God frustrated their plans, caused the builders to begin speaking various languages and "scattered them throughout the earth" (Genesis 11:8).

The Bible's chronology suggests those events occurred more recently than the 11,500-year date assigned by the Nature article, Jeanson said. But he discounted the evolutionary dating methods used by many secular scientists because they allegedly are inconsistent with one another and based on unverified assumptions.

"Based on genetic clocks that have been published even by evolutionists," Jeanson said, "you can explain the origin of all people groups genetically within the last few thousand years."

Kurt Wise, a Southern Baptist and Harvard-trained paleontologist, told BP in written comments the 11,500 "radiocarbon years" cited by Nature "amount to many fewer true (chronological) years (probably closer to 4,000-4,100 years)."

"If one considers the ages" given by Nature "in relative terms, the new findings are consistent with a dispersion of humans from Babel," said Wise, professor of natural history at Truett McConnell University, "people making it to western-most Europe, southern-most Africa, and eastern-most Asia first, then coming through the Bering Strait from western Asia into what is now Alaska ... and spreading from there into northern, central, and southern South America.

"So, these remains," Wise said, "are most probably of a population of people spreading out from Babel" -- a reality he termed "rather exciting!"

Young-earth creationists like Jeanson and Wise believe the universe was created by God's direct action thousands, rather than millions, of years ago. Other believers known as old-earth creationists also claim God created the universe by direct action, but much longer ago than young-earth creationists contend. Theistic evolutionists claim God created the universe using the evolutionary process.

David Roach is chief national correspondent for Baptist Press, the Southern Baptist Convention's news service. BP reports on missions, ministry and witness advanced through the Cooperative Program and on news related to Southern Baptists' concerns nationally and globally.

Please visit the site: <http://www.bpnews.net/50147/ancient-dna-said-to-support-bibles-babel-account>



SCAN TECHNIQUE REVEALS SECRET **WRITING IN MUMMY CASES,** **BY PALLAB GHOSH**

Researchers in London have developed scanning techniques that show what is written on the papyrus that mummy cases are made from.

These are the decorated boxes into which the wrapped body of the deceased was placed before it was put in a tomb.

They are made from scraps of papyrus which were used by ancient Egyptians for shopping lists or tax returns.

The technology is giving historians a new insight into everyday life in ancient Egypt.

The hieroglyphics found on the walls of the tombs of the Pharaohs show how the rich and powerful wanted to be portrayed. It was the propaganda of its time.

The new technique gives Egyptologists access to the real story of Ancient Egypt, according to Prof Adam Gibson of University College London, who led the project.

"Because the waste papyrus was used to make prestige objects, they have been preserved for 2,000 years," he said.

"And so these masks constitute one of the best libraries we have of waste papyrus that would otherwise have been thrown away so it includes information about these individual people about their everyday lives"

The scraps of papyrus are more than 2,000 years old. The writing on them is often obscured by the paste and plaster that holds the mummy cases together. But researchers can see what is underneath by scanning them with different kinds of light which makes the inks glow.

One of the first successes of the new technique was on a mummy case kept at a museum at Chiddingstone castle in Kent. The researchers discovered writing on the footplate that was not visible to the naked eye.

The scan revealed a name - "Irethorru" - a common name in Egypt, the David or Stephen of its time, which meant: "the eye of Horus is against my enemies".

Until now, the only way to see what was written on them was to destroy these precious objects - leaving Egyptologists with a dilemma. Do they destroy them? Or do they leave them untouched, leaving the stories within them untold?

Now, researchers have developed a scanning technique that leaves the cases intact but allows historians to read what is on the papyrus.

According to Dr Kathryn Piquette, of University College London, Egyptologists such as her now have the best of both worlds.

"I'm really horrified when we see these precious objects being destroyed to get to the text. It's a crime. They are finite resources and we now have a technology to both preserve those beautiful objects and also look inside them to understand the way Egyptians lived through their documentary evidence - and the things they wrote down and the things that were important to them."

Please visit the site: <http://www.bbc.com/news/science-environment-42357259>

THE FIRST ROYAL WINERY OF ITS KIND IN HEROD'S PALACES WAS DISCOVERED AT HERODION

The large royal winery that is now being revealed in Herodion sheds light on, among other things, the reasons for the agricultural flourishing of vineyards and wine presses in Judea at the end of the Second Temple period.

Among the remains that were found are dozens of huge jugs, densely arranged in the storage space, which is located in the structure that surrounds the circular palace

During archaeological excavations conducted at the Herodion National Park, which is run by the Israel Nature and Parks Authority and the Chief Officer of the Nature Reserves and Parks Unit of the Civil Administration, were revealed for the first time in the palaces of King Herod remains of a large royal winery. These remains are now exposed to the public for the first time as part of a Heritage Week in Israel, held annually during Hanukkah by the Ministry of Jerusalem and Heritage, the Israel Nature and Parks Authority, the Israel Antiquities Authority and the Council for Conservation of Heritage Sites, and intended to raise public awareness of the importance of preserving the heritage.

Ze'ev Elkin, Minister of Jerusalem and Heritage said: "When I stand here today in Herodion, a five minute drive from my home in the village of Kfar Eldad and pass in my imagination all the important events in the history of our people that took place on this mountain or at its foot, I do not need to explain why it is easy to mark Heritage Week in the State of Israel. In every corner of our country, no matter where you live, you will know how to discover a heritage site near the home of each and every one of you. Thousands of years of our history are folded into every square kilometer in the Land of Israel and there is nothing like Chanukah to feel and demonstrate to our children the spirit of the saying 'in those days in this season'."

Shaul Goldstein, Director General of the Nature and Parks Authority said: "King Herod's palace in Herodion is a site that changes its face all the time, every day there is revealed there ancient and fascinating history. There is nothing like the Herodion site to open the Heritage Week of our country. In the coming year we will also continue in the Nature and Parks Authority, together with our natural partners, to invest a great deal of resources in the heritage sites and to expose the findings to the general public, while enhancing the experience of visiting the sites."

The winery was discovered during an excavation that was carried out in the past year in the warehouses and impressive cellars of the fortified palace that Herod built at the top of Herodion Mountain. The remains include tens of gigantic pits, densely arranged in the storage space, which is located in the structure of the circular palace. They were probably used as fermentation tanks, from which the wine was poured into jars and amphorae, which may have been stored in cellars with vaulted ceilings that were built at this point in the area, and which were exposed in recent excavations.

These excavations are being conducted by the Ehud Netzer Expedition [to Herodium] of the Institute of Archeology at the Hebrew University, headed by archaeologists Roi Porat, Yakov Kalman and Rachel Chachy.

The excavations are being conducted as part of the development of the Herodion site, led by the Jerusalem and Heritage Authority, the Israel Nature and National Parks Authority, the Antiquities Authority and the Israel Institute of Archaeology.

Wineries of this type from the Roman period are known from archaeological finds from the Italian region and around the Empire. The use of ceramic fermentation tanks is common in wineries for many periods, and in fact to this day (for example, in Georgia, etc.). The wine industry was of great importance in the Roman period, and the production, importation and use of high quality wines by Herod was, of course, also an expression of economic and cultural status. It should be noted that during the course of the excavations at Herodion, as well as at Masada, dozens of amphorae (large jars) were discovered bearing shipping inscriptions and seals, indicating large shipments of fine Italian wine to Herod the King. The great royal winery that is now being discovered in Herodion sheds light, among other things, on the reasons for the agricultural flourishing of vineyards and wine presses in Judea at the end of the Second Temple Period.

The winery, like the palace-fortress of the entire mountain, ceased to be used upon the death of Herod, during the conversion of Mount Herodion to the monumental tomb of the king. During the Great Revolt, about 70 years later, when Herodion was used as a bastion for the rebels, the warehouses in which the winery was located were used as a residential area, and even as a goat pen. The rich finds from this period include many coins from the rebellion, pottery and glass vessels and remains of food. During the Bar Kokhba Revolt (132-136 CE), the basements of the palace served as passages to the system of guerrilla tunnels that were quarried in the mountainside. To support the tunnels, the rebels used many wooden beams that were removed from Herod's palace, and these survived well in the recently discovered cellars.

Another surprising discovery in Herodion -- a fortification from the time of the Hasmonean revolt against the Greeks -- the Hellenistic period

In the meantime, during the course of the excavations were also revealed by surprise, under the level of King Herod's Palace's courtyard, remains of buildings and a water reservoir that dated to the Hellenistic period -- mid-second century BCE. The remains were buried and sealed under the walls of the palace and under the layer of garden soil that was based in the courtyard at its establishment. It should be noted that to date no evidence has been found at the site of any activity prior to Herod.

The remains of the structures indicate a well-organized construction project that was built at the top of the mountain, including straight, wide walls that delineated large square rooms. Next to the buildings was exposed a large rock-hewn water reservoir, which was also dated to this period. The construction of these structures at the top of Mount Herodion, with its strategic characteristics, and not near the agricultural area in the valleys below it, indicate that these are remains of a fortification rather than an agricultural settlement.

It is possible that the holding of the site was connected to the events that took place in the region during the outbreak of the Hasmonean revolt. This is the case of the campaign that

the Seleucid commander Bacchides conducted in 156 BCE against Yonatan and Shimon the Hasmoneans in the community of Beit-Betzi, located northwest of Herodion, as well as the line of fortifications that Bacchides built in Judea a few years earlier, and fortifications he built in this area. It may be, then, that the fortification at the top of Mount Herodion was built as part of these systems, whether by the Greeks or by the Hasmoneans. However, it should be noted that until now there has not been discovered at Herodion any ceramic assemblages characteristic of the Hasmonean period itself, and it is possible that in this period until the time of Herod the mountain remained empty.

Please visit the site: <http://www.parks.org.il/News/Pages/yekev.aspx>

COMPLEX ENGINEERING AND METAL- WORK DISCOVERED BENEATH ANCIENT GREEK 'PYRAMID', BY MAEV KENNEDY

Latest find on Cyclades' Keros includes evidence of metal-working and suggests the beginnings of an urban centre, say archaeologists

More than 4,000 years ago builders carved out the entire surface of a naturally pyramid-shaped promontory on the Greek island of Keros. They shaped it into terraces covered with 1,000 tonnes of specially imported gleaming white stone to give it the appearance of a giant stepped pyramid rising from the Aegean: the most imposing manmade structure in all the Cyclades archipelago.

But beneath the surface of the terraces lay undiscovered feats of engineering and craftsmanship to rival the structure's impressive exterior. Archaeologists from three different countries involved in an ongoing excavation have found evidence of a complex of drainage tunnels – constructed 1,000 years before the famous indoor plumbing of the Minoan palace of Knossos on Crete – and traces of sophisticated metalworking.

The Dhaskalio promontory is a tiny island as the result of rising sea levels, but 4,500 years ago was attached by a narrow causeway to Keros, now uninhabited and a protected site. In the third millennium BC Keros was a major sanctuary where complex rituals were enacted.

Earlier excavations by the team from the University of Cambridge, the Ephorate of Antiquities of Cyclades and the Cyprus Institute have uncovered thousands of marble Cycladic sculptures – the stylised human figures which inspired western artists, including Pablo Picasso – and which appear to have been deliberately broken elsewhere and brought to the island for burial.

Maintaining as well as constructing the settlement would have taken a huge communal effort. The now-deserted slopes of Dhaskalio were once covered with structures and buildings, suggesting that 4,500 years ago it was one of the most densely populated parts of the islands – despite the fact that it could not have been self-sufficient, meaning that most food, like the stone and the ore for metal working, had to be imported.

The first evidence of metal-working was found in excavations 10 years ago. The new finds have uncovered two workshops full of metalworking debris, and objects including a lead axe, a mould for copper daggers and dozens of ceramic fragments from metalworking equipment including the mouth of a bellows. Archaeologists will return to excavate an intact clay oven, found at the very end of the last season.

Joint director of the excavation Michael Boyd, of the University of Cambridge, said metalworking expertise was evidently concentrated at Dhaskalio at a time when access to both skills and raw materials was very limited.

“What we are seeing here with the metalworking and in other ways is the beginnings of urbanisation,” he said. Far-flung communities were drawn into networks centred on the site, craft and agricultural production was intensified, and the architecture became grander, gradually overshadowing the original importance of the sanctuary.

Excavated soil reveals food traces including pulses, grapes, olives, figs and almonds, and cereals, including wheat and barley. Evi Margaritis of the Cyprus Institute said: “Much of this food was imported: in the light of this evidence we need to reconsider what we know about existing networks to include food exchange.”

The pyramid of terraces would have blazed in the Greek sun, visible from far off, covered in white stone imported from Naxos 10 kilometres away. The complex of drainage tunnels was discovered when archaeologists were excavating an imposing staircase in the lower terraces: research continues to discover whether they were for fresh water or sewage.

Lord Renfrew, joint director of the excavation, former Disney professor of archaeology at Cambridge and now the senior fellow at the McDonald Institute for archaeological research, first landed on Keros as a student and has returned often throughout his long career. He believes the promontory may originally have become a focus for development because it guarded the best natural harbour on the island, with wide views across the Aegean.

The excavations are being recorded digitally, using the iDig programme running on iPads for the first time in the Aegean. This creates three-dimensional models using photogrammetry recording of the entire digging process, giving everyone involved access to all data in real time.

This article was amended on 18 January 2018 to correct an erroneous reference to the palace of Knossos, which is Minoan, not Mycenaean.

Please visit the site: <https://www.theguardian.com/world/2018/jan/18/complex-engineering-and-metal-work-discovered-beneath-ancient-greek-pyramid>

500 YEARS LATER, SCIENTISTS DISCOVER WHAT PROBABLY KILLED THE AZTECS

Within five years, 15 million people – 80% of the population – were wiped out in an epidemic named ‘cocoliztli’, meaning pestilence

In 1545 disaster struck Mexico’s Aztec nation when people started coming down with high fevers, headaches and bleeding from the eyes, mouth and nose. Death generally followed in three or four days.

Within five years as many as 15 million people – an estimated 80% of the population – were wiped out in an epidemic the locals named “cocoliztli”. The word means pestilence in the Aztec Nahuatl language. Its cause, however, has been questioned for nearly 500 years.

On Monday scientists swept aside smallpox, measles, mumps, and influenza as likely suspects, identifying a typhoid-like “enteric fever” for which they found DNA evidence on the teeth of long-dead victims.

“The 1545-50 cocoliztli was one of many epidemics to affect Mexico after the arrival of Europeans, but was specifically the second of three epidemics that were most devastating and led to the largest number of human losses,” said Ashild Vagene of the University of Tuebingen in Germany.

“The cause of this epidemic has been debated for over a century by historians and now we are able to provide direct evidence through the use of ancient DNA to contribute to a longstanding historical question.”

Vagene co-authored a study published in the science journal Nature Ecology and Evolution.

The outbreak is considered one of the deadliest epidemics in human history, approaching the Black Death bubonic plague that killed 25 million people in western Europe in the 14th century – about half the regional population.

European colonisers spread disease as they ventured into the new world, bringing germs local populations had never encountered and lacked immunity against.

The 1545 cocoliztli pestilence in what is today Mexico and part of Guatemala came just two decades after a smallpox epidemic killed an estimated 5-8 million people in the immediate wake of the Spanish arrival.

A second outbreak from 1576 to 1578 killed half the remaining population.

“In the cities and large towns, big ditches were dug, and from morning to sunset the priests did nothing else but carry the dead bodies and throw them into the ditches,” is how Franciscan historian Fray Juan de Torquemada is cited as chronicling the period.

Even at the time, physicians said the symptoms did not match those of better-known diseases such as measles and malaria.

Scientists now say they have probably unmasked the culprit. Analysing DNA extracted from 29 skeletons buried in a cocoliztli cemetery, they found traces of the salmonella enterica bacterium, of the Paratyphi C variety.

It is known to cause enteric fever, of which typhoid is an example. The Mexican subtype rarely causes human infection today.

Many salmonella strains spread via infected food or water, and may have travelled to Mexico with domesticated animals brought by the Spanish, the research team said.

Salmonella enterica is known to have been present in Europe in the middle ages.

“We tested for all bacterial pathogens and DNA viruses for which genomic data is available,” and salmonella enterica was the only germ detected, said co-author Alexander Herbig, also from Tuebingen University.

It is possible, however, that some pathogens were either undetectable or completely unknown. “We cannot say with certainty that S enterica was the cause of the cocoliztli epidemic,” said team member Kirsten Bos. “We do believe that it should be considered a strong candidate.”

Please visit the site: <https://www.theguardian.com/world/2018/jan/16/mexico-500-years-later-scientists-discover-what-killed-the-aztecs>

SWISS ARCHAEOLOGIST DISCOVERS THE EARLIEST TOMB OF A SCYTHIAN PRINCE

Swiss National Science Foundation (SNSF) Summary: Deep in a swamp in the Russian republic of Tuva, a Swiss archaeologist has discovered an undisturbed Scythian burial mound. All the evidence suggests that this is not only the largest Scythian princely tomb in South Siberia, but also the earliest -- and that it may be harboring some outstandingly well-preserved treasures. Share:

Deep in a swamp in the Russian republic of Tuva, SNSF-funded archaeologist Gino Caspari has discovered an undisturbed Scythian burial mound. All the evidence suggests that this is not only the largest Scythian princely tomb in South Siberia, but also the earliest -- and that it may be harbouring some outstandingly well-preserved treasures.

Gino Caspari made the most significant find in his career to date not with a shovel, but at a computer. A recipient of Swiss National Science Foundation (SNSF) funding, archaeologist Caspari discovered a circular structure on high-resolution satellite images of the Uyk River valley (Siberia) on his computer screen. An initial trial dig carried out this summer by the Bern University scientist together with the Russian Academy of Sciences and the Hermitage Museum confirmed his suspicion: the structure is a kurgan, a Scythian princely tomb.

Looking back at the beginnings

Working with a Swiss-Russian team, Caspari was able to prove that the burial mound -- referred to as Tunnug 1 (or Arzhan 0) -- was similar in construction to the kurgan Arzhan 1 located only ten kilometres away to the northeast. Arzhan 1 had long been regarded as the earliest Scythian princely tomb in the region, which is also known as the "Siberian Valley of Kings" owing to the numerous kurgans found there.

The earliest princely tombs consist of a stone packing with a circular arrangement of chambers. The walls of the chambers are made of larch logs. Scythian burial objects typically include weapons, horse's harnesses and objects decorated in the so-called animal style.

Wooden beams found by Caspari during the test excavation date back to the 9th century BC, predating Arzhan 1, which was built at the turn of the 9th to the 8th century BC and excavated in the 1970s. "We have a great opportunity here," says a delighted Caspari, commenting on the results of the trial dig published in the current issue of *Archaeological Research in Asia* (*).

"Archaeological methods have become considerably more sophisticated since the 1970s. Today we have completely different ways of examining material to find out more about the transition from the Late Bronze Age to the Iron Age," remarks the SNSF-funded researcher. He also stresses that the way we look at prehistoric times is changing radically thanks to genetics, isotope analysis and geophysical methods as well as developments in geographic information systems and remote sensing.

Protective armour of ice

The Arzhan 0 burial mound is in an inaccessible location amid swampy terrain, which also makes it harder for grave robbers to reach. "The kurgan is five arduous hours by off-road vehicle from the nearest settlement," Caspari points out. As it may never have been disturbed, it could contain similar treasures to Arzhan 2. Between 2001 and 2004, a German team of archaeologists discovered an undisturbed burial chamber in Arzhan 2 containing the richest collection of burial artefacts ever found in the Eurasian steppe. Over a thousand gold objects had been placed with the two corpses in the tomb's main chamber, in addition to magnificently adorned weapons, pots and horses with exquisite harnesses. Made of solid gold, the necklace of the Scythian prince from Arzhan 2 weighs 2 kilos alone. But the date of the burial is put at the 7th century BC, i.e. well into the Iron Age.

The climatic characteristics of the Siberian soil add to Caspari's hopes. In the Uyk Valley, the permafrost layer largely begins just a few metres below the surface. Everything above that thaws in summer, and organic material rots. However, beneath the thick stone packing of the kurgans, the rays of sunlight are unable to thaw out the soil. "Very rarely ice lenses form directly beneath the kurgans," explains Caspari. The ice prevents the decay of organic matter and preserves sensitive material. Caspari is expecting further finds to be unearthed in the course of the project: "If we're lucky, we might even find some well-preserved wood carvings or carpets under the stones, or perhaps an ice mummy."

Please visit the site:

<https://www.sciencedaily.com/releases/2018/01/180111090243.htm>

ANCIENT PHOENICIAN DNA FROM SARDINIA, LEBANON REFLECTS SETTLEMENT, INTEGRATION, MOBILITY

Ancient DNA from the Phoenician remains found in Sardinia and Lebanon could provide insight into the extent of integration with settled communities and human movement during ancient times, according to a study* published January 10, 2018 in the open-access journal PLOS ONE by E. Matisoo-Smith from the University of Otago, New Zealand and Pierre Zalloua from the Lebanese American University, Beirut, and colleagues. The researchers looked at mitochondrial genomes, which are maternally inherited, in a search for markers of Phoenician ancestry.

The Phoenicians were an ancient civilization who emerged in 1800 BCE in the Northern Levant and by the 9th century BCE had spread their culture across the Mediterranean to parts of Asia, Europe and Africa through their trade networks and settlements. Despite their widespread influence, most of what we know about the Phoenicians comes from Greek and Egyptian documents on this civilization.

The authors of this study analyzed Phoenicians' ancient DNA to investigate how Phoenicians integrated with the Sardinian communities they settled. The researchers found 14 new ancient mitogenome sequences from pre-Phoenician (~1800 BCE) and Phoenician (~700-400 BCE) samples from Lebanon and Sardinia and then compared these with 87 new complete mitogenomes from modern Lebanese and 21 recently published pre-Phoenician ancient mitogenomes from Sardinia.

The researchers found evidence of continuity of some lineages of indigenous Sardinians after Phoenician settlement, which suggests that there was integration between Sardinians and Phoenicians in Monte Sirai. They also discovered evidence of new, unique mitochondrial lineages in Sardinia and Lebanon, which may indicate the movement of women from sites in the Near East or North Africa to Sardinia and the movement of European women to Lebanon. Combined, the authors suggest that there was a degree of female mobility and genetic diversity in Phoenician communities, indicating that migration and cultural assimilation were common occurrences.

Pierre Zalloua says, "this DNA evidence reflects the inclusive and multicultural nature of Phoenician society. They were never conquerors, they were explorers and traders".

Please visit the site: <http://popular-archaeology.com/issue/winter-2018/article/ancient-phoenician-dna-from-sardinia-lebanon-reflects-settlement-integration-mobility>

IMAGING TECHNOLOGY REVEALS BIRTH OF ATHENA ON 2,300-YEAR-OLD SHARD FROM GALILEE, BY AMANDA BORSCHEL-DAN

Reflectance Transformation Imaging (RTI) is an increasingly common technique in the tool chests of today's archaeologists.

When the Bethsaida Excavations Project uncovered a small, highly decorated pottery shard at its dig site north of the Sea of Galilee back in 2016, a lively debate ensued over what exactly was depicted on it.

“Some saw a figure seated upon a seat with another figure next to it. Others saw something erotic,” laughed Dr. Rami Arav, the project director and a professor of Religion and Philosophy at the University of Nebraska in Omaha. “But I said, ‘No, it can’t be erotic. It must be something else,” he recalled this week in conversation with The Times of Israel.

As reported recently in Haaretz, the “something else” on the 2,300-year-old shard turned out to be the goddess Athena springing to life fully formed from the head of her father Zeus, as the nymph Dione and goddess Aphrodite look on. The scene is a rare replica of what is found in the eastern pediment (triangular gable) of the Parthenon, the richly carved marble temple dedicated to Athena completed in Athens in 432 BCE.

RTI photographic depiction of Apulian pottery portraying Dione and Aphrodite found in Israel’s e-Tell site near the Sea of Galilee. The image is apparently the copy of a design found at the Parthenon in Athens, from the 5th century BCE. (Hanan Shafir, Bethsaida Excavations / Michael Maggen, The Israel Museum)

It is not the first important discovery uncovered at the e-Tell site, the location of both Bethsaida and the ancient city of Geshur, which Arav has excavated since 1987, with the Consortium of the Bethsaida Excavations Project — a group of 30 scholars from 18 international institutions.

On show at the Israel Museum is one of the more important finds from the site, a Bull Stele that stood atop an altar at the entrance of Geshur, which was discovered in 1996. And in 2014, the team discovered a rare Roman coin issued in 85 CE by Agrippa II bearing the phrase “Judea Capta,” which commemorated the victory over the Jewish rebels and the destruction of the temple in Jerusalem.

But what revealed the scene on the small 7.5 cm x 3 cm “Athena” shard is almost as fantastical as the mythology it depicts. To piece together the picture, excavation photographer Hanan Shafir used Reflectance Transformation Imaging (RTI), an increasingly common technique in today’s archaeologists’ tool chests.

RTI photography is a technique developed in the past several years based on the 2001 work by Hewlett-Packard Labs scientists Tom Malzbender and Dan Gelb. To create the special composite image, an object is photographed 48 times from the same spot, under changing light conditions as the source of light moves at the same distance around the object.

According to non-profit corporation Cultural Heritage Imagine, a leading proponent of the technique, “In each photograph, light is projected from a different known, or knowable, direction. This process produces a series of images of the same subject with varying highlights and shadows.”

“A special software combines all the 48 pictures into one active image,” said Shafir. The photographer can choose which photos had the best light source in different modes — black and white, focus on topography, etc. “The result is a digital improvement of the photo that simulates a 3D image,” he said. While best if performed in laboratory conditions, Shafir said the technique can also be used on items found in situ at dig sites.

Shafir, who learned RTI photography in 2014 from the Israel Museum’s head of Paper Conservation Michael Maggen, performed the procedure on the pottery shard back at his Ramat Hasharon lab. To get a clearer look at the pottery shard, he eliminated all color and enhanced its topography, which produces a “shiny,” but clear image. The results were also analyzed by Dr. Stefany Peluso, a post-doctoral student at Haifa University.

“Today, technology helps archaeology in many ways; it can enhance things that you don’t see otherwise and allow archaeologists to search on the computer for things you don’t see in the naked eye,” said Arav.

Shafir gives the example of an oil lamp the team discovered four years ago. According to the naked eye, “you could see there’s something on the spout; otherwise, you didn’t see a thing.” With the RTI imaging, “now you see things that are really amazing... with the shiny RTI topography image, you have a real surprise.”

RTI photographic depiction of a Hellenistic oil lamp found circa 2013 at the Bethsaida Excavations, north of the Sea of Galilee. (Hanan Shafir, Bethsaida Excavations)

Souvenir from far-flung lands?

Just how the piece of pottery made it to the Galilee is now a greater mystery than what is depicted upon it. According to Haaretz, the only other surviving artistic copy of the Parthenon frieze was found a mere 25 km from Athens in Eleusis.

Apulian pottery portraying Dione and Aphrodite found in Israel’s e-Tell site near the Sea of Galilee. The image is apparently the copy of a design found at the Parthenon in Athens, from the 5th century BCE. (Hanan Shafir, Bethsaida Excavations / Michael Maggen, The Israel Museum)

The Bethsaida shard, said Arav, which is now black with an inner color of light brown or red, likely dates to 2nd century BCE. According to dig director Arav, the shard is what

could be considered a contemporary knock off of “Apulian pottery,” a style of pottery painting which began in circa 7th century BCE based in southern Italy and has come to typify the archetypical “Grecian urn” look.

However, like today’s imitation “Gucci” cases that are made in Hong Kong not Italy, the Bethsaida copy of the Parthenon scene most likely originates from the Phoenician coast, said Arav.

There is a lot to learn about the settlers of Bethsaida based on this pottery shard, said Arav.

“It tells me that in spite of being remote from Athens, Rome and the big cultural centers of the world of that time, and despite the fact that they did not have newspapers, radio, television, internet connection, and things that we think today that connects us to the world, people were very much connected,” he said.

“Looking at their coins they could tell who the current rulers were, what there is to see in the cities that minted their coins. Pictures on ceramic vases could tell them about the monuments in the cities, remind them of stories they were told about their gods and goddesses, and local heroes,” said Arav.

The pot shard allowed the Galilean settlers have an idea how the pediments on the Parthenon were decorated, without making the trip to Athens.

“It is similar to tourists traveling to Paris and bringing back home a miniatures of Eiffel Tower. They show it to their families and say:

‘See, this is what there is to see in Paris.’ We are not that much different,” said Arav.

Please visit the site: <https://www.timesofisrael.com/imaging-technology-reveals-birth-of-athena-on-2300-year-old-shard-from-galilee/> [Go there for pix]

UNIVERSITY OF HAIFA RESEARCHERS DECIPHER MYSTERIOUS DEAD SEA SCROLL, BY DANIEL K. EISENBUD

“An important peculiarity of the present discovery is the fact that the [Qumran] sect followed a 364-day calendar.”

Utilizing 60 minuscule fragments of mysterious ancient code from the second-to-last unpublished Dead Sea Scrolls, researchers at the University of Haifa have decoded a unique 364-day calendar once used by the enigmatic Qumran Sect in the Judean Desert.

The 900 Dead Sea Scrolls (also known as the “Qumran Scrolls”) dating to the Second Temple Period were discovered in the 1940s and 1950s in the Qumran Caves near the Dead Sea.

The Qumran Sect referred to itself as the Yahad (“Together Community”) and was a fanatical group that lived a hermitic lifestyle in the desert, facing persecution by the dominant establishment of the time.

They wrote numerous scrolls, a small number of them in code – including the 60 relics on parchment that Dr. Eshbal Ratson and Prof. Jonathan Ben-Dov of Haifa University’s Department of Bible Studies were able to translate.

The researchers spent a year painstakingly studying the tiny fragments from the second-to-last scroll, some which measured smaller than one square centimeter.

“The reward for their hard work is fresh insight into the unique 364-day calendar used by the members of the Judean Desert sect, including the discovery for the first time of the name given by the sect to the special days marking the transitions between the four seasons,” the university said in a statement on Sunday.

Although an earlier researcher who examined the 60 pieces postulated that they came from several different scrolls, Ratson and Ben-Dov proved in an article recently published in the Journal of Biblical Literature that the fragments actually constitute a single scroll.

According to the researchers, the calendar was involved in one of the fiercest debates between different sects during the late Second Temple period.

“An important peculiarity of the present discovery is the fact that the [Qumran] sect followed a 364-day calendar,” the university said.

“The lunar calendar, which Judaism follows to this day, requires a large number of human decisions. People must look at the stars and moon and report on their observations, and someone must be empowered to decide on the new month and the application of leap years.”

By contrast, the researchers described the 364-day calendar as “perfect.”

“Because this number can be divided into four and seven, special occasions always fall on the same day,” they said in a joint statement.

“This avoids the need to decide, for example, what happens when a particular occasion falls on the Sabbath, as often happens in the lunar calendar. The Qumran calendar is unchanging, and it appears to have embodied the beliefs of the members of this community regarding perfection and holiness.”

MOREOVER, RATSON and Ben-Dov said the scroll describes two special occasions not mentioned in the Bible, but which are already known from the Temple Scroll of Qumran: The festivals of New Wine and New Oil.

“These dates constituted an extension of the festival of Shavuot as we know it today, which celebrates the New Wheat,” they said.

“According to this calendar, the festival of New Wheat falls 50 days after the first Sabbath following Passover; the festival of New Wine comes 50 days later; and after a further interval of 50 days, the festival of New Oil is celebrated.”

The scroll also provided some other enlightening finds.

The researchers were aware from the previous scrolls that the members of the sect celebrated the transition between the seasons by adding a special day for each of the four changes of season.

Until now, however, the name of these special days remained unknown.

The present scroll reveals that these days were referred to by the word tekufah, which translates from Hebrew to “period.”

“This term is familiar from the later rabbinical literature and from mosaics dating to the Talmudic period, and we could have assumed that it would also be used with this meaning in the scrolls,” Ratson and Ben-Dov explained.

“But, this is the first time it has been revealed.”

The present scroll also provides additional information about the customs of its authors.

“It emerges that the person who wrote the scroll – probably one of the leaders of the sect familiar with the secret code – forgot to mention several special days marked by the community,” they noted.

As a result, another scribe was forced to correct the errors, adding the missing dates in the margins between the columns of text.

“The scroll is written in code, but its actual content is simple and well-known and there was no reason to conceal it,” they said. “This practice is also found in many places

outside the Land of Israel, where leaders write in secret code even when discussing universally-known matters, as a reflection of their status.”

The custom, the researchers explained, was intended to show that the author was familiar with the code, while others were not.

“However, this present scroll shows that the author made a number of mistakes,” they noted.

“This scroll includes numerous words and expressions that we find later in the Mishna [“review” - the first major written redaction of the Jewish Oral Law]. This shows once again that many of the subjects discussed by the scribes several centuries later had origins that predated the Second Temple period,” they concluded.

Please visit the site: <http://www.ipost.com/Israel-News/Culture/University-of-Haifa-researchers-decipher-mysterious-Dead-Sea-Scroll-539357>

WHEN LIFE GIVES YOU LEMONS: TRACKING THE EARLIEST CITRUS IN THE MEDITERRANEAN, BY DAFNA LANGGUT

One of the most famous Levantine exports of the 20th century was the Jaffa orange, and we have long associated the region with citrus.

Today citrus orchards are a major component of the Mediterranean landscape and among the region's most important cultivated fruits. But while citrus is now iconic, it may come as a surprise that it is not native to the Mediterranean Basin; these species originated thousands of miles away, in Southeast Asia. So how did the first citrus arrive in the Mediterranean, and why?

Citrus was first cultivated by humans at least four thousand years ago in Southeast Asia, and all cultivated species derive from a handful of wild ancestors. Several years ago I found the earliest archaeobotanical evidence of citrus within the Mediterranean in a royal Persian garden near Jerusalem dating to the fifth and fourth centuries BCE. In the course of research I traced the spread and diversification of citrus through a variety of historical information, including ancient texts, art, and artifacts such as wall paintings and coins, and by gathering all the available archaeobotanical remains: fossil pollen grains, charcoal, seeds, and other fruit remains.

These botanical remains were evaluated for their reliability (in terms of identification, archaeological context and dating), and other possible interpretations. The data enabled me to understand the spread of citrus from Southeast Asia into the Mediterranean. The citron (*citrus medica*, better known in the Jewish tradition as the etrog) was the first citrus fruit to reach the Mediterranean, via Persia. The citron has a thick rind and a small, dry pulp, but it was the first to arrive in the west, and for this reason the whole group of fruits (citrus) is named after one of its less economically important members. It was introduced to the Eastern Mediterranean around the 5-4th century BCE and then traveled quickly west. The citron and the lemon (*citrus limon*, a hybrid of the citron and the bitter orange, which was introduced to the west at least four centuries later) were originally considered elite products. This means that for more than a millennium, citron and lemon were the only citrus fruits known in the Mediterranean Basin.

The citron was brought to ancient Israel to display the power of the Persian ruler and it slowly penetrated to the Jewish religious and symbolic worlds (the etrog is one of the key species used during the Sukkot holiday and is frequently depicted on coins and mosaics) and then to the central and western Mediterranean. Remains of this species were also found in gardens owned by affluent members of the western Roman world, for example in the area of Vesuvius and around Rome, dated to the 3rd-2nd century BCE. It appears that the citron was considered a valuable commodity due to its healing qualities, symbolic use, pleasant odor and its rarity, such that only the rich could have afforded it. Its spread therefore was helped more by its representation of high social status, its significance in religion, and unique features more than by its culinary qualities (which are somewhat limited).

In contrast, sour orange, lime, and pummelo were introduced to the west much later beginning in the 10th century CE, by the Muslims, probably via Sicily and the Iberian Peninsula. It is clear that Muslims played a crucial role in the dispersal of cultivated citrus in Northern Africa and Southern Europe. This is also evident from the common names of many of the citrus types that are derived from Arabic.

The dispersal of these fruits was possible because the Islamic world controlled extensive territory and commercial routes reaching from India to the Mediterranean.

The introduction of the sweet orange is dated even later, to the 15th century CE. Its arrival is probably linked with the trade route established by the Genoese and then in the 16th century CE by the Portuguese. The mandarin, one of the four core citrus species, was only introduced to the Mediterranean region at the beginning of the 19th century. Mediterranean cuisines that feature citrus are thus relatively recent developments, and their appearance in European (and American diets) even later. Today, the Mediterranean produces at least 20% of the world's citrus.

The spread of these species, and their movement from elite to everyday status, shows how different cultures adapt unusual plants as status symbols of wealth and power, but then spread to all levels of society, influencing economics, diets and nutrition in the process.

Dr. Dafna Langgut is Head of the Laboratory of Archaeobotany and Ancient Environments at the Institute of Archaeology at Tel Aviv University.

**Please visit the site: <http://www.asor.org/anetoday/2018/01/citrus-mediterranean>
[Go there for virtual fruits]**

WE’VE BEEN DEBATING FOIE GRAS SINCE ANCIENT TIMES - EARLY EGYPTIANS AND GREEKS FORCE-FED GEESE, DUCKS, AND HYENAS, BY ANDREW COLETTI

The force-feeding of geese to produce foie gras is one of the most controversial practices in food today. The process is known as gavage and is most associated with France, where the parliament recently declared it a part of the country’s cultural heritage—in defiance of bans in other areas. But humans all over the world have been force-feeding animals to fatten their livers (and debating whether or not to do so) for millennia.

Foie gras production takes advantage of how waterfowl prepare for long migrations by eating extra calories, which they store as fat deposits in their livers and under their skin. The Egyptians were the first to replicate this natural process by shoving food down the throats of geese, ducks, and cranes, depicted in Egyptian wall-reliefs as far back as 2500 BC. Birds were not the only victims; other Egyptian artwork depicts cows too fat to walk being transported by cart, and even the force-feeding of hyenas. It’s unclear whether Egyptians specifically prized the livers of these animals. The primary motivation for gavage in Egypt was the production of animal fat, which they used in everything from hair-loss remedies to the famous Egyptian eyeliner.

Gavage appears to have spread from Egypt to Greece at an unknown date—Homer’s *Odyssey* (written around the 8th century BC) contains the earliest written reference to fattened geese. In the 4th century BC, we find the first mention of their livers as a delicacy.

Force-feeding later spread from Greece to Rome, where it was expanded into a sinister art form. Roman pigs had food crammed down their throats in the same manner as geese, while tiny dormice were tricked into pre-hibernation binges by being kept in total darkness and surrounded by nuts. Not even snails were safe; the Roman cookbook *Apicius* instructs chefs to remove the operculum (the little door that snails use to seal their shells) from live snails before feeding, so the animals will be unable to return to their shells and will swell to unnatural size.

Ancient people force-fed their birds with grain or moistened flour pellets (much like modern producers of foie gras), but at some point, the Greeks began to use dried figs. The Romans added a grisly innovation by giving a drink of honeyed wine to their fig-stuffed geese and pigs. The resultant moisture and gases expanded the dried fruit in the animals’ stomachs, causing a fatal case of indigestion.

Liver thus harvested was called *iecur ficatum* in Latin, *iecur* meaning “liver” and *ficatum* meaning “figgy.” Over time, the original word for liver was dropped, and the dish enjoyed as *ficatum*. This gave rise to the word for liver in the modern Romance languages: Italian *fegato*, Spanish *hígado*, and French *foie*. So whenever people discuss foie gras, they unknowingly reference figs.

We shouldn't assume from the popularity of gavage in the ancient world that there were no objections to animal cruelty. The first-century writer Plutarch makes his position clear in a diatribe called *On the Eating of Meat*. "For the sake of a little flesh," he laments, "we deprive [animals] of sun, of light, of the duration of life to which they are entitled by birth and being ... Begging for mercy, entreating, seeking justice, each one of them say[s], 'I do not ask to be spared in case of necessity; only spare me your arrogance! Kill me to eat, but not to please your palate!'" It's worth noting that, though a Roman citizen, Plutarch was Greek, and his position on animals has more precedence among the Greeks than the Romans. In the same text, Plutarch supports his argument with the example of early Greek philosophers who encouraged vegetarianism on moral grounds.

While no author in antiquity specifically opposes the practice of gavage, several display disapproving sentiments towards eaters of foie gras. For the Greeks and Romans alike, diet was seen as a reflection of character. Rich, expensive food became a symbol of decadence and corruption, and those who ate it invited criticism. In a satire by the Roman poet Horace, guests at a banquet refuse to try "a white goose liver fattened with succulent figs" because the pompous host won't shut up about his elaborate menu: "In revenge, we took off, leaving him there, without tasting a thing." The Emperor Elagabalus, who was vilified as extravagant, was said to feed his dogs nothing but foie gras.

After the fall of the Roman Empire, foie gras and gavage all but disappeared from European tables under the influence of Medieval Christianity, which ranked gluttony among the deadly sins. Meanwhile, European Jews, restricted by religious law from cooking with butter or lard, turned to force-feeding poultry as a source of fat, just as the Egyptians had done thousands of years before. Foie gras did not see mainstream popularity again until the 16th century, when Renaissance chefs started buying goose liver from local Jewish communities.

With increased concern about the welfare of the geese themselves, some modern farmers have developed ethical foie gras, produced from birds that gorge of their own volition. Many others continue the practice of gavage, producing a divisive delicacy so ancient that its name refers to its own long history. The debate over foie gras and force-feeding continues, except now we leave the hyenas out of it.

Please visit the site: <https://www.atlasobscura.com/articles/ancient-foie-gras-debate>

**RESEARCHERS AT THE UNIVERSITY
COLLEGE OF LONDON ARE WORKING TO
FIND A WAY TO READ THE ANCIENT
SCRAPS WITHOUT DESTROYING THE
ARTIFACTS IN THE PROCESS,
BY BRIGIT KATZ**

We're One Step Closer to Non-Invasively Reading Ancient Papyri Hidden in Mummy Masks.

Before mummified bodies were laid to rest in ancient Egypt, they were often covered with masks that presented idealized versions of the deceased, symbolizing their elevation to a god-like status. But hidden within these artifacts are texts that testify to the more humdrum realities of Egyptian existence. Many mummy masks, along with casings that covered other parts of the dead, were made from “cartonnage,” a material consisting of recycled scraps of papyrus etched with receipts, decrees, tax records, marriage contracts and other snippets of daily life.

Researchers at the University College of London recently announced that they have made an important step forward in analyzing the papyri contained within mummy coverings. Crucially, and in contrast to previous efforts, they have done so without destroying the artifacts in the process.

Cartonnage was a foundational element of Egyptian funerary technology.

The material could contain linen in addition to or in place of papyri, and was used as a flexible base that was molded over the bodies of the dead. The cartonnage was then plastered over and painted, sometimes with luxurious designs. But these casings were not purely decorative; they were an important precaution taken to preserve the body for the afterlife.

In the past, researchers have accessed papyri that was packed into cartonnage by pulling the layers of cartonnage apart and separating out the desired texts. Doing so completely destroys the mummy coverings, but the sacrifice has been deemed necessary because papyri contain rare and vital information that cannot be found in the idealized inscriptions of tombs and monuments—information “about the daily grind, the disputes, the concerns, the problems and issues that people were dealing with as part of lived experience,” says Kathryn Piquette, an Egyptologist and imaging specialist at the University College of London (UCL).

Scholars later devised a way to extract cartonnage from the surrounding plaster without ruining the painted exterior. But this method, according to Piquette, is “nevertheless very destructive,” since it still involves dismantling the cartonnage.

In search of a better way to access cartonnage papyri, Piquette and other members of the UCL team—which was led by professors Melissa Terras and Adam Gibson, and aided by

PhD student Cerys Jones—tried to peer into cartonnage using non-invasive, advanced imaging techniques.

They tested three technologies on simulated cartonnage, which Piquette made by layering pieces of modern papyri that were inscribed with replicas of ancient ink. And the team found that each technology was useful in a different way when it came to penetrating through layers of paint, plaster and linen to get to the hidden texts. X-rays, for example, were successful at detecting inks containing metal, like red iron oxide, but weren't so great at sussing out carbon-based inks. The opposite was true of a technique called terahertz radiation.

Researchers also tested a fragment of a real mummy mask using multispectral imaging, which can detect a range of different colors by illuminating objects with different wavelengths of light. In a different context, Piquette and Jones made an important discovery using this method. They analyzed an Egyptian coffin lid and were able to decipher faded hieroglyphs that likely spelled out the deceased's name: Irethoreru, or "the eye of Horus is against them," with "them" probably referring to enemies. But the success of multispectral imaging on cartonnage was more limited. The technique could detect both metal and carbon-based inks near the surface of the cartonnage, but could not penetrate far into the layers.

It's important to note that with all three methods, researchers were only able to determine the presence of different inks within the dense cartonnage; they could not glean enough information to read the texts.

Their study is just the first step in what will surely be a long trajectory of research—but it is a significant first step.

"You have to start somewhere, and it's really important to take a multi modal approach: to be trying a lot of different techniques alongside each other and comparing the different results," says Piquette. "Before we start to try to get more out of a particular technology ... we need to characterize its potential and its limitations. We don't want to be wasting our time trying to refine a particular technique when we realize, 'Well, x-ray is no good for carbon ink.'"

Moving forward, the UCL team plans to test more pieces of real cartonnage, in the hopes of developing non-destructive technologies that will allow them to actually read intriguing ancient texts. And since cartonnage objects continue to be looted in Egypt and disassembled by eager collectors, there is a definite urgency to the team's work.

"Cartonnage are very much at risk," says Piquette. "As long as there is a market for buying [illicit] antiquities ... and there is this interest in extracting texts relating to biblical sources, classical writers, literary texts, then the destruction of these precious objects will continue apace. If we can demonstrate a proof of concept, [we can] get the word out there that even if these things are obtained illicitly, you don't have to destroy them."

Please visit the site: <https://www.smithsonianmag.com/smart-news/were-one-step-closer-non-invasively-reading-ancient-papyri-hidden-in-mummy-masks-180967863/>

WHY ANCIENT GREEK SCULPTURES HAVE SMALL PENISES, BY ALEXA GOTTHARDT

The ancient Greeks famously fetishized the male body in sculptures that represent powerful, illustrious men as hulking figures with taut, rippling muscles. Sometimes these figures appear partially clothed in drapery or cloth; often, they are stark naked.

To the contemporary eye, their bodies are ideal—except for one, ahem, seminal detail. “They have small to very small penises, compared to the average of humanity,” art historian Andrew Lear, a specialist in ancient Greek art and sexuality, says. “And they’re usually flaccid.”

Countless contemporary art lovers and historians have been struck by the modest nature of the phalluses that feature in classical sculptures of gods, emperors, and other elite men—from Zeus to celebrated athletes. The small members seem at odds with the massive bodies and mythically large personalities they accompany. But the ancient Greeks had their reasons for this aesthetic choice.

Rewind to the ancient Greek world of around 400 BC, and you’ll find that large, erect penises were not considered desirable, nor were they a sign of power or strength. In his play *The Clouds* (c. 419–423 BC), ancient Greek playwright Aristophanes summed up the ideal traits of his male peers as “a gleaming chest, bright skin, broad shoulders, tiny tongue, strong buttocks, and a little prick.”

Historian Paul Chrystal has also conducted research into this ancient ideal. “The small penis was consonant with Greek ideals of male beauty,” he writes in his book *In Bed with the Ancient Greeks* (2016).

“It was a badge of the highest culture and a paragon of civilization.”

In ancient Greek art, most of a great man’s features were represented as ample, firm, and shiny—so why weren’t these same aesthetic principles applied to the penis? As Lear and other historians suggest, part of the answer lies in how the phalluses of less admirable men were portrayed.

Attributed to the Pisticci Painter, Terracotta bell-krater (mixing bowl), ca. 430–410 B.C. Courtesy of The Metropolitan Museum of Art.

Terracotta amphora (jar), ca. 500–490 B.C. Courtesy of The Metropolitan Museum of Art.

Lustful, depraved satyrs, in particular, were rendered with very large, erect genitals, sometimes almost as tall as their torsos.

According to mythology, these creatures were part-man, part-animal, and totally lacked restraint—a quality reviled by Greek high society.

“Big penises were vulgar and outside the cultural norm, something sported by the barbarians of the world,” writes Chrystal. Indeed, across many an amphora pot and frieze, well-endowed satyrs can be seen drinking and pleasuring themselves with abandon.

In Greek comedy, fools also routinely sported large genitals—“the sign of stupidity, more of a beast than a man,” according to Chrystal. So, too, did artistic representations of the Egyptians, says Lear, who were long-time enemies of the Greeks.

In this way, satyrs, fools, and foes served as foils to male gods and heroes, who were honored for their self-control and intelligence (along with other qualities requiring restraint, like loyalty and prudence). If large phalluses represented gluttonous appetites, then “the conclusion can be drawn that the small, flaccid penis represented self-control,” explains Lear.

While today, being well-endowed is often equated with power and even sound leadership, “the penis was never a badge of virility or manliness in ancient Greece as it was in other cultures,” Chrystal writes. “Potency came from the intellect needed to power man’s responsibility to father children, prolong the family line and the oikos [the family unit or household], and sustain the polis [the city-state].”

There is no doubt that across ancient Greek art, the representation of the phallus—and its varying size—was symbolic. As Lear suggests, this might hint at why artists of the age depicted male nudes so often, even when a character or narrative might not require it. “They used the penis as an index of character,” explains Lear. “It said something.”

Back then, it indicated whether or not a man was upstanding. But while the cultural symbolism of the penis has since shifted, some things haven’t changed. Then, as now, the male sex was seen to be the distillation of a man’s ability to dominate.

Please visit the site: <https://www.artsy.net/article/artsy-editorial-ancient-greek-sculptures-small-penises> See also: <https://www.thenationalherald.com/188243/ancient-greek-male-statues-not-well-endowed/>

CARVED HUMAN SKULLS REVEAL CULTIC RITUALS AT MYSTERIOUS SITE IN TURKEY, BY STEPHANIE PAPPAS

Researchers have discovered seven skull fragments from three different skulls, each marked with deep cuts like this one made shortly after death.

No one knows what rituals were performed at the site, which was constructed 11,000 years ago during the Stone Age in an impressive display of handiwork: The site contains several stone rings, which are decorated with elaborately carved animals and punctuated with pillars up to 13 feet (4 meters) tall. There are no signs that anyone lived at the site, which is called Göbekli Tepe, nor are there signs of formal graves. But archaeologists have uncovered 691 human bone fragments mixed into the soil there.

"It's a fantastic place," said Julia Gresky, a paleopathologist and bioarchaeologist at the German Archaeological Institute in Berlin.

Now, Göbekli Tepe has become a little bit more fantastic with the discovery of skull fragments carved with long, deliberate lines from the forehead to the back of the head. These discoveries reveal the existence of a "skull cult" in ancient eastern Anatolia, Gresky told Live Science. The ritual markings on these skulls are unlike those seen in any other civilization, though.

"I tried to compare to other known skeletal investigations from other sites, but there was nothing," Gresky said. [Gallery: See Photos of the Carved Skulls of Göbekli Tepe]

Skull cults

Skull cults appear across history and even in some modern tribal societies. In these cultures, skulls are typically exhumed shortly after burial and de-fleshed. They might then be painted or sculpted over with plaster. At Cayönü Tepesi, another Neolithic, or Stone Age, site in Turkey, archaeologists uncovered a building that contained some 70 disembodied skulls. Another Stone Age site called Tell Qaramel in present-day Syria contained human skeletons with missing heads and cut marks suggesting the skulls had been removed shortly after death.

Göbekli Tepe was built at a time when Stone Age peoples in the region were making the transition from hunting and herding to a more sedentary, agricultural lifestyle. Gresky and her colleagues found the Göbekli Tepe skull fragments in a loose mixture of backfill material filling up the circular stone structures at the site. The backfill consists of soil, pieces of flint, human bone fragments and animal bone fragments, Gresky said, and no one really knows how it got inside the site's structures. It may have been excavated by people abandoning the site, who used the material to fill in the defunct structures, she said. Or it could have simply washed down into the buildings from higher ground over the years.

Between 2009 and 2014, Gresky found seven skull fragments with strange carving marks on them. The seven fragments belong to three skulls. All seem to have come from adults, but the remains aren't complete enough to say much about the ages or sex of the individuals.

Skull décor?

Markings on the skulls indicated they'd been cleaned of flesh and then cut soon after death, Gresky and her colleagues reported today (June 28) in the journal *Science Advances*. The carvings were deep grooves that ran from the forehead back along the top of the skull; some fragments preserved lateral carvings, too, located above where the ear would have been. One skull had a drill mark about 0.2 inches (5 millimeters) in diameter near the center of the top of the head. This same skull also showed traces of red ochre, a natural pigment frequently found on Neolithic skulls used in rituals.

The carvings and the lack of other decorations, like plaster, make the Göbekli Tepe skulls unlike any others found before, Gresky said.

Though the people who built Göbekli Tepe were clearly talented carvers who could create works of stone art, the skull carvings are crude, Gresky said. Their ugliness could indicate that they were a way of stigmatizing the dead individual for some reason, she said.

Alternatively, the carvings could have been a way to decorate or display the skulls. The grooves might have provided purchase for cords, which might have been used to attach feathers or other bangles, Gresky said. Or the cords could have been used to hang the skulls and keep their dangling jaws from falling down. The drilled mark in one of the fragments was positioned in a way that if a cord were threaded through it, the skull could hang vertically, Gresky said.

As to why Neolithic people were so fixated on skulls, that remains an even larger mystery. In recorded history, skull cults usually form for one of two reasons, Gresky said. Some groups display the skulls of their dead enemies. Others disinter and decorate skulls as a form of ancestor worship.

"At the moment, we can't say what is the most probable" at Göbekli Tepe, Gresky said. "That will take some time and hopefully more skeletons."

Please visit the site: <https://www.livescience.com/59643-carved-human-skulls-found-cultic-site.html> [For pix, go to <https://www.livescience.com/59644-photos-carved-human-skulls.htm>

IN CAVE IN ISRAEL, SCIENTISTS FIND JAWBONE FOSSIL FROM OLDEST MODERN HUMAN OUT OF AFRICA, BY NICHOLAS ST. FLEUR

Scientists on Thursday announced the discovery of a fossilized human jawbone in a collapsed cave in Israel that they said is between 177,000 and 194,000 years old.

If confirmed, the find may rewrite the early migration story of our species, pushing back by about 50,000 years the time that Homo sapiens first ventured out of Africa.

Previous discoveries in Israel had convinced some anthropologists that modern humans began leaving Africa between 90,000 and 120,000 years ago. But the recently dated jawbone is unraveling that narrative.

“This would be the earliest modern human anyone has found outside of Africa, ever,” said John Hawks, a paleoanthropologist from the University of Wisconsin, Madison who was not involved in the study.

The upper jawbone — which includes seven intact teeth and one broken incisor, and was described in a paper in the journal Science — provides fossil evidence that lends support to genetic studies that have suggested modern humans moved from Africa far earlier than had been suspected.

“What I was surprised by was how well this new discovery fits into the new picture that’s emerging of the evolution of Homo sapiens,” said Julia Galway-Witham, a research assistant at the Natural History Museum in London who wrote an accompanying perspective article.

Dr. Hawks and other researchers advised caution in interpreting the discovery. Although this ancient person may have shared some anatomical characteristics with present-day people, this “modern human” would have probably looked much different from anyone living in the world today.

“Early modern humans in many respects were not so modern,” said Jean-Jacques Hublin, director of the department of human evolution at the Max Planck Institute for Evolutionary Anthropology in Germany.

Dr. Hublin said that by concluding the jawbone came from a “modern human,” the authors were simply saying that the ancient person was morphologically more closely related to us than to Neanderthals.

That does not mean that this person contributed to the DNA of anyone living today, he added. It is possible that the jawbone belonged to a previously unknown population of Homo sapiens that departed Africa and then died off.

That explanation would need to be tested with DNA samples, which are difficult to collect from fossils found in the arid Levant.

The upper jawbone, or maxilla, was found by a team led by Israel Hershkovitz, a paleoanthropologist at Tel Aviv University and lead author of the new paper, while excavating the Misliya Cave on the western slopes of Mount Carmel in Israel. The jawbone was discovered in 2002 by a freshman on his first archaeological dig with the group.

The team had long known that ancient people lived in the Misliya Cave, which is a rock shelter with an overhanging ceiling carved into a limestone cliff. By dating burned flint flakes found at the site, archaeologists had determined that it was occupied between 250,000 to 160,000 years ago, during an era known as the Early Middle Paleolithic.

Evidence, including bedding, showed that the people who lived there used it as a base camp. They hunted deer, gazelles and aurochs, and feasted on turtles, hares and ostrich eggs.

Dr. Hershkovitz and Mina Weinstein-Evron, an archaeologist at the University of Haifa, felt that the jawbone looked modern, but they needed to confirm their hunch.

Dr. Hershkovitz has made similar findings in the past. In 2015, he announced finding a 55,000-year-old skull in the Levant. But a 2010 discovery of 400,000-year-old teeth in Israel in which he participated received criticism for how it was reported in the media.

To test their suspicions about the jawbone, the archaeologists sent the specimen on a world tour. “It looked so modern that it took us five years to convince people, because they couldn’t believe their eyes,” said Dr. Weinstein-Evron.

One of the first stops was Austria, home to a virtual paleontology lab run by Gerhard W. Weber, a paleoanthropologist at the University of Vienna. There scientists were able to assess whether the bone belonged to a modern human or a Neanderthal, which are thought also to have occupied the region during that time period.

Using high resolution micro-CT scanning, Dr. Weber created a 3D replica of the upper left maxilla that allowed him to investigate its surface features and, virtually, to remove enamel from the teeth.

He then performed a morphological and metric test that compared the Misliya fossil with about 30 other specimens, including fossils of Neanderthals, Homo erectus, more recent Homo sapiens, and other hominins that lived in the Middle Pleistocene in Asia, Africa Europe and North America.

“The shape of the second molar, the two premolars and the whole maxilla are very modern,” said Dr. Weber.

The tests also found that the base of the cheek bone was located above the first molar, the incisors lacked a shovel shape, and the premolars were high and narrow, all characteristics found in modern humans and not Neanderthals.

“It’s not a little bit modern, or on the border of being modern,” he said. “It is really modern human.”

“It looks like they’ve done a really thorough study of the morphology of the maxilla and determined it’s not a Neanderthal,” said Melanie L.

Chang, an anthropologist from Portland State University who was not involved in the study. “I believe them.”

Next, the archaeologists determined the jawbone’s age by performing three dating techniques in Australia, France and Israel.

“The dating had to be rock solid,” said Rolf M. Quam, an anthropologist at Binghamton University in New York and an author of the paper. The team dated the tooth dentin and enamel, the sediment stuck to the upper jaw, and tools found near the fossil.

“I don’t know how much more we could do with this little bone,” said Dr. Quam. “I think we’ve squeezed blood from a turnip here.”

Together, the techniques put the jawbone at between 177,000 and 194,000 years old, in line with what was already known about the period during which the cave was inhabited.

“This thing is as old as we thought it was, and it was probably the earliest Homo sapien out of Africa ever found,” said Dr. Quam. “It’s not very often you can make a superlative statement, but in this case we can.”

The Misliya finding is just the latest in a series of discoveries that are changing the story of our evolutionary past. One study, not yet confirmed, suggested that modern humans may have interbred with Neanderthals in Eurasia about as far back as 220,000 years ago.

If so, that would mean that at least some modern humans migrated from Africa far earlier than previously thought. Indeed, early humans may have made multiple journeys through the Levant corridor.

“We are now realizing that it was not one big exodus out of Africa in a given time period,” said Dr. Hershkovitz. “Rather, there was a flow of hominins coming in and out of Africa for at least the last half a million years.”

Please visit the site: <https://www.nytimes.com/2018/01/25/science/jawbone-fossil-israel.html>
