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Πληροφοριακό Δελτίο της Ελληνικής Αρχαιομετρικής Εταιρείας

- Οκτώβριος 2017 -

**He who steals a little steals with the same wish as he who
steals much, but with less power.**
(Plato)

Newsletter of the Hellenic Society of Archaeometry

- October 2017 -

Nr. 199

ΠΙΝΑΚΑΣ ΠΕΡΙΕΧΟΜΕΝΩΝ – TABLE OF CONTENTS

ΣΥΝΕΔΡΙΑ – CONFERENCES/WORKSHOPS

Association for Environmental Archaeology, Autumn Conference 2017, Grand Challenge Agendas in Environmental Archaeology, University of Edinburgh (UK), 1-3 December 2017, Call for papers **page 4**

CALL FOR PAPERS: ASHLAR. EXPLORING THE MATERIALITY OF CUT STONE MASONRY IN THE EASTERN MEDITERRANEAN BRONZE AGE International workshop organized by AEGIS (UCLouvain-INCAL-CEMA) and the ARC 'A World in Crisis', Louvain-la-Neuve, 8th-9th of March 2018 **page 6**

Workshop "Making, Understanding, Storytelling", Athens, 14-15 October 2017 **page 8**

ISA 2018, 42nd International Symposium on Archaeometry, May 20-26, 2018, Merida, Yucatan, southeast of Mexico **page 9**

ΘΕΣΕΙΣ ΕΡΓΑΣΙΑΣ/ΥΠΟΤΡΟΦΙΕΣ – JOB VACANCIES/FELLOWSHIPS

The Cyprus American Archaeological Research Institute (CAARI) postgraduate and postdoctoral fellowships 2018 **page 10**

2 fellowship announcements for INSTAP Study Center for East Crete **page 13**

NEH FELLOWSHIPS **page 14**

ΑΝΑΚΟΙΝΩΣΕΙΣ - ANNOUNCEMENTS

Forthcoming Shortcourse at the University of Sheffield **page 16**

Bursaries for the Association of Environmental Archaeology conference 2017 . **page 18**

INTERNET SITES

The Center for Ancient Middle Eastern Landscapes (CAMEL) at the Oriental Institute of the University of Chicago Anatolian Atlas **page 19**

ΝΕΕΣ ΕΚΔΟΣΕΙΣ – NEW PUBLICATIONS

ΝΕΑ ΕΚΔΟΣΗ ΣΤΗ ΣΕΙΡΑ ΠΡΑΚΤΙΚΩΝ ΔΙΕΘΝΩΝ ΣΥΝΕΔΡΙΩΝ – ANCIENT HELIKE AND AIGIALEIA **page 20**

ΕΙΔΗΣΕΙΣ - NEWS RELEASE

Remains of decapitated toads found in a jar in a 4,000-year-old tomb **page 24**

Citrus: From Luxury Item to Cash Crop **page 26**

Ancient textiles reveal differences in Mediterranean fabrics in the 1st millennium BC **page 28**

- Lost city in Iraq founded by Alexander the Great discovered by archaeologists
- Drone photography used to unearth dormant ruins, by Niamh McIntyre **page 30**
- Rare artifacts and complex features in architecture found in Minoan palace on
Cretan mountain **page 32**
- The Phoenician Alphabet in Archaeology - What did the Phoenicians record
with their innovative script? By Josephine Quinn **page 34**
- Kuwaiti Archaeologists Discover Rare Arabic Manuscripts in Mount Athos, by
Theo Ioannou **page 37**
- Carbon dating reveals earliest origins of zero symbol **page 38**
- Large Mycenaean-era engraved tomb unearthed in Orchomenos, south-central
Greece - The Bronze Age grave shows nobleman's love of jewelry **page 39**
- Earthquake faults may have played key role in shaping the culture of ancient
Greece **page 43**
- Ancient writing in Turkey dates back to 2000 BC **page 45**
- Lost Languages Discovered in One of the World's Oldest Continuously Run
Libraries The centuries-old texts were erased, and then written over, by monks
at Saint Catherine's Monastery in Egypt, by Brigit Katz **page 47**
- 7,200-year-old vessel unearthed in Israel shows ritual of food storage
Archaeologists Danny Rosenberg and Florian Klimscha believe clay vessel
unearthed at Tel Tsaf in Jordan Valley was a model silo Daniel Siryoti and
Israel, by Hayom Staff **page 49**
- Archaeologists Reconstruct How the Arch of Titus Looked - in Full Color
When built, the Arch was not a majestic white stone testimony to Rome
crushing the Jews, it was a brightly colored monument aggrandizing Vespasian
and his dynasty, by Ruth Schuster **page 51**
- The mystery of the lost Roman herb, by Zaria Gorvett **page 54**
- The Color Purple: Mystery of What Has Been Killing Ancient Parchments
Solved **page 60**
- 8,000-year-old paint workshop discovered in Turkey's Eskişehir **page 63**
- Ancient city in Lasithi, Crete sheds light on demise of Minoan civilization **page 64**
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ΣΥΝΕΔΡΙΑ - CONFERENCES/WORKSHOPS

ASSOCIATION FOR ENVIRONMENTAL ARCHAEOLOGY, AUTUMN CONFERENCE 2017, GRAND CHALLENGE AGENDAS IN ENVIRONMENTAL ARCHAEOLOGY, UNIVERSITY OF EDINBURGH (UK), 1-3 DECEMBER 2017, CALL FOR PAPERS

How do we approach today's great themes in international environmental archaeology? How will this feed into the next research agenda? What are environmental archaeology's grand challenges? 'Grand challenges for archaeology' have recently been proposed to focus the disciplines efforts and capabilities on the most important scientific challenges (Kintigh *et al.* 2014, *PNAS* 111, 879-80). Those identified focus on investigating the dynamics of complex socio-ecological systems, addressing key questions of emergence, complexity, demography, mobility, identity, resilience, and human-environment interactions. Environmental archaeology is ideally situated to contribute directly to these challenges, concerned, as it is, with the human ecology of the past – the relationship between past human populations and their physical, biological and socio-economic environments – through the analysis and interpretation of animal and plant remains within the depositional environment of the archaeological site and its surrounds. These approaches allow analysis of the dynamics of socio-ecological systems at varying spatial and temporal scales. Combined with the continued advancement of scientific methodological applications this is enabling increasingly powerful insights into human paleoecology, for example via analyses of palaeodiets, disease ecology, and past climatic change. Particular challenges lie in how to integrate data generated from diverse methodological approaches, and how to model and test cultural and ecological agency in the past, and how to tap the full potential that lies in increasingly large and disparate datasets being generated by the different practitioners of environmental archaeology. Public and fiscal responsibility also challenges environmental archaeological research to contribute to debates of relevance to the modern world, with its important potential insights on human-environment interactions, biodiversity, food security, and societal resilience.

This conference seeks to explore the grand challenge agendas for environmental archaeology that confront its methods, approaches, contributions and relevance, including (but not limited to):

- the ways in which the discipline can contribute to the major research foci of archaeology
- advances in method, and integration of methods, that are permitting more robust and nuanced insights in these areas
- approaches to modelling and testing past socio-ecological relationships, and exploring issues of cause and effect in these systems
- the ways in which environmental archaeological research is relevant and contributes to the contemporary world

The organising committee invites oral and poster presentations that examine these themes. We are particularly keen to encourage comparative research that show how regional case studies can make essential contributions to globally-important questions, or indeed help to shape them and set new agendas for research.

Please send proposals for papers and posters to AEA2017@ed.ac.uk. The deadline has been extended to **Friday 13 October 2017**. Abstracts should be sent as Word documents, be a maximum of 200 words and contain a clear description of the topic. Please include a title, complete name(s) of author(s), affiliation(s), and full postal and email addresses.

Early registration costs:

Student, AEA member: £60

Student, non-AEA member: £70

AEA member: £80

Non-AEA member: £90

Early registration will open soon and run to 10 November 2017, after this date a late booking fee will apply.

Conference organisers:

Dr Robin Bendrey, School of History, Classics and Archaeology, University of Edinburgh

Prof Andrew Dugmore, School of Geosciences, University of Edinburgh

Dr Eva Panagiotakopulu, School of Geosciences, University of Edinburgh

Dr Xavier Rubio-Campillo, School of History, Classics and Archaeology, University of Edinburgh

**CALL FOR PAPERS: ASHLAR. EXPLORING
THE MATERIALITY OF CUT STONE
MASONRY IN THE EASTERN
MEDITERRANEAN BRONZE AGE
INTERNATIONAL WORKSHOP ORGANIZED
BY AEGIS (UCLouvain-INCAL-CEMA) AND
THE ARC 'A WORLD IN CRISIS', LOUVAIN-
LA-NEUVE, 8TH-9TH OF MARCH 2018**

Cut stone masonry is one of the most prominent features that characterises monumental architecture, the appearance of which is imbued with symbolic meaning and corollary to wholesale changes in the societies of the Bronze Age Eastern Mediterranean (Harmanşah 2007; Knapp 2009; Broodbank 2013; Fisher 2014). Ashlar walls and orthostat lining indeed mark a considerable increase in energy investment in architecture, as well as the mobilisation of a large and skilled workforce necessary for its construction in the 3rd and 2nd millennium BC Aegean, Anatolia, Cyprus, Egypt, Syria and Levant. Seen against the backdrop of long-distance interactions that connect these regions from the 3rd millennium onwards and which intensify throughout the Bronze Age, the extensive use of cut stone in the Bronze Age Eastern Mediterranean is taken as one of the main indications of knowledge transfer within the region. The precise form of this transfer remains unclear, however. Although hints at shared building practices between different areas are suggested on the basis of similarities in the tool kits, extraction methods or general structural and formal features (Hult 1983; Wright 1985; Küpper 1996; Palyvou 2005, 2009; Seeher 2008; Shaw 2009; Bachmann 2009; Phylokyprou 2013; Blackwell 2014), no obvious filiation between cut stones building techniques can be traced. Furthermore, detailed technical case-studies, the prerequisite for any comparative study, are few.

The purpose of this workshop is to explore the materiality of cut stone masonry in the different regions of the Bronze Age Eastern Mediterranean, in order to provide data that will lay the foundations for a meaningful discussion on transfer of architectural knowledge.

For doing so, we welcome contributions of two types: 1. Comparative studies that focus on the following questions: When and under what form(s) did cut stone masonry appear in the different regions of the Eastern Mediterranean? What are the specific technical and formal traits of cut stone masonry, and do these remain stable or do they evolve throughout the Bronze Age within each region? What is the production process associated with cut stone masonry in each region of the Eastern Mediterranean? For what purposes were ashlar and orthostats used and is it possible to point out synchronic or diachronic differences in their cultural significance? Are there any indications that the builders tended to adopt foreign architectural traits in stone masonry, and if yes, how did they adapt them to the specificities of the building materials available locally? Or, on the contrary, does cut stone masonry in each region reflect resistance to external influences,

and if so, what is the impact of tradition and physical determinism? 2. Case-driven investigations of ashlar and orthostat use. These contributions should address the stone-working technologies and construction techniques that were practiced as well as the functional, social and symbolic roles cut stone masonry played in the spaces and structures it adorned. Other topics might include, but are not limited to: the development of ashlar and orthostat use in a site over time; a comparison between the techniques used for the production of cut stone architecture and stone statuary; the assessment of the skill involved in producing cut stone architecture in regard to the use of other building materials; the impact of the development of cut stone architecture on local and long-used building materials.

Invited speakers: Jean-Claude Bessac, Nicholas Blackwell, Kevin Fisher, Ömür Harmanşah, Valérie Matoïan, Joseph Shaw, and James Wright.

A Preliminary title and an abstract of minimum 500 words should be sent to the organisers (<mailto:maud.devolder@uclouvain.be>) by the 30th of September 2017.

The number of speakers will be limited and priority will be given to contributions related to the objectives described above. Travel and hotel expenses are not covered by the organisers but lunches will be taken care of. Each presentation will be 30 minutes, and the conference proceedings will be published in the AEGIS collection.

Organisers: Maud Devolder, Igor Kreimerman and Jan Driessen, UCLouvain, Louvain-la-Neuve, Belgium

WORKSHOP "MAKING, UNDERSTANDING, STORYTELLING", ATHENS, 14-15 OCTOBER 2017

Dear all,

The workshop, entitled "**Making, Understanding, Storytelling**" aims to bring together research into experimental archaeology in Ireland and Greece. It will take place in Athens on the 14th and 15th October 2017.

The workshop is organised by the Irish Institute of Hellenic Studies at Athens (IIHSA), the UCD School of Archaeology, Centre for Experimental Archaeology, in collaboration with the Museum of Cycladic Art, Athens.

Everyone is welcome, but registration is necessary to ensure a place (email: irishinstitute@hol.gr).

The programme can be found on the iihsa website: <http://www.iihsa.ie/athensprog.html>

Christina Souyoudzoglou-Haywood, PhD, FSA
Director, Irish Institute of Hellenic Studies,
& Adjunct Lecturer, School of Classics, University College Dublin
Newman Building, Belfield, Dublin 4.

Director, Kephalaria Project - Livatho Valley Survey,

<http://www.iihsa.ie>

<http://www.iihsa.ie/Kephalaria.html>

Tel +353 1 2833493

**ISA 2018, 42ND INTERNATIONAL
SYMPOSIUM ON ARCHAEOLOGY, MAY 20-
26, 2018, MERIDA, YUCATAN, SOUTHEAST
OF MEXICO**

Dear colleagues

The 42nd International Symposium on Archaeology will be held from May 20th to 26th in Merida, Yucatan, in the southeast of Mexico.

ISA 2018 is a specialized forum for research and applications of Archaeology and Archaeological Sciences that covers the full spectrum of topics, materials, techniques, chronologies and regions.

You may find the complete information regarding the scope of the symposium, the venue, important dates, etc, in the web page: <http://isa2018.mx>

See you in Merida!

ΘΕΣΕΙΣ ΕΡΓΑΣΙΑΣ/ΥΠΟΤΡΟΦΙΕΣ –
JOB VACANCIES/FELLOWSHIPS

THE CYPRUS AMERICAN
ARCHAEOLOGICAL RESEARCH INSTITUTE
(CAARI) POSTGRADUATE AND
POSTDOCTORAL FELLOWSHIPS 2018

The Cyprus American Archaeological Research Institute (CAARI) is now accepting applications for postgraduate and postdoctoral fellowships for 2018. Please see below, as well as our website, for full details and deadlines.

<http://caari.org/fellowships/>

Lindy Crewe
Director, CAARI
11 Andreas Demitriou Street
Nicosia 1066
Cyprus

CAARI FELLOWSHIPS

FOR ACADEMIC YEAR 2018-2019

THE CYPRUS AMERICAN ARCHAEOLOGICAL RESEARCH INSTITUTE (CAARI) in Nicosia, Cyprus, welcomes scholars and students specializing in archaeology, history, and culture of Cyprus and the eastern Mediterranean. CAARI is located in central Nicosia close to the Cyprus Museum and the Archaeological Research Unit of the University of Cyprus (both with major libraries), as well as the main business and commercial district. In addition to hostel accommodation for a total of twelve residents, the institute has excellent research facilities: a 10,000-volume library, comprehensive map and artifact collections, archival material, and facilities for Internet, scanning, and photography.

Recipients of fellowships are required to spend time as residents of CAARI and to submit a written report for the CAARI newsletter.

Deadline for CAARI-sponsored fellowships are December 15, 2017. Other relevant deadlines are listed below.

GRADUATE STUDENT FELLOWSHIPS

There is a common application for the Parks, Swiny, and O'Donovan Graduate Student Fellowships and it's available here.

The Danielle Parks Memorial Fellowship

Danielle Parks, author of *The Roman Coinage of Cyprus* (Nicosia, 2004), directed excavations at the Amathus Gate Cemetery. She first came to Cyprus as an Anita Cecil O'Donovan Fellow. Her death as a young scholar in 2006, deeply felt by the wide circle of her colleagues and friends, is memorialized here by a fellowship designed to open the world of Cypriot culture to young scholars.

This is a fellowship of US \$2,000 for a graduate student of any nationality who needs to work in Cyprus to further his/her research on a subject of relevance to Cypriot archaeology and culture. The purpose of the fellowship is to help cover travel to and living expenses in Cyprus. Applications are invited especially from students of Hellenistic and Roman Cyprus. During his/her stay, the fellow is expected to give a presentation at CAARI on a subject related to his/her research. The fellow will periodically keep the Director of CAARI apprised of his/her research activities. The fellow will acknowledge CAARI and the Danielle Parks Memorial Fellowship in any publication that emerges from the research carried during the fellowship. Residence at CAARI is required.

Application: [Download here](#).

Deadline: December 15, 2017.

The Helena Wylde Swiny and Stuart Swiny Fellowship:

One grant of US \$2,000 to a graduate student of any nationality in a college or university in the U.S. or Canada to pursue a research project that is relevant to an ongoing field project in Cyprus or that requires work on Cyprus itself. The award is to be used to fund research time spent in residence at CAARI and to help defray costs of travel. Residence at CAARI is required.

Application: [Download here](#).

Deadline: December 15, 2017.

The Anita Cecil O'Donovan Fellowship:

Founded in memory of musician, composer, and homemaker Anita Cecil O'Donovan, this fellowship offers one grant of US \$2000 to a graduate student of any nationality, enrolled in a graduate program in any nation, to pursue research on a project relevant to the archaeology and/or culture of Cyprus; to be used to fund a period of research time in residence at CAARI and to help defray costs of travel. Residence at CAARI is required.

Application: [Download here](#).

Deadline: December 15, 2017.

Fulbright Student Program:

<http://us.fulbrightonline.org/countries/selectedcountry/cyprus>

*See also below for CAORC Fellowships open to US doctoral candidates.

Council of American Overseas Research Centers (CAORC) PO Box 37012, MRC 178
Washington, DC 20013-7012 fellowships@caorc.org
202-633-1599

POST-DOCTORAL FELLOWSHIPS

CAARI Senior Scholar In Residence:

An established scholar who commits to stay at least 30 days in succession at CAARI, ideally in the summer, and to be available in evenings and weekends to younger scholars working there, in return for 50% reduction in residency rate. Must have PhD in archaeology or ancillary field for at least 5 years prior to visit, be fluent in English (but may be of any nationality), and be committed to mentoring students. Travel and other expenses not covered.

Application: [Download here](#).

Deadline: December 15, 2017.

CAARI/CAORC Research Fellowships:

Two fellowships provide US \$5500 each (up to US \$1500 for transportation and up to an additional US \$4000 for research expenses on the island) and are designed for scholars who already have their PhDs, whose research engages the archaeology, history, culture, or geography of Cyprus, and who would derive significant benefit from a month's research time on the island. Particular consideration is given to applicants whose projects enable them to include Cyprus in their teaching. A minimum of 30 days residence at CAARI is required. Applicants must be U.S. citizens.

Application: [Download here](#).

Deadline: December 15, 2017. (NOTE: Amount available is anticipated but depends on federal appropriations which have not yet been finalized)

Fulbright Scholars Program:

<http://www.cies.org/country/cyprus>

Council of American Overseas Research Centers (CAORC) NEH Senior Research Fellowships:

The Council of American Overseas Research Centers (CAORC) is pleased to announce the National Endowment for the Humanities Senior Research Fellowship Program! This fellowship supports advanced research in the humanities for U.S. postdoctoral scholars, and foreign national postdoctoral scholars who have been residents in the US for three or more years.

Scholars must carry out research in a country which hosts a participating American overseas research center. Eligible countries for 2017-2018 are: Algeria, Armenia, Azerbaijan, Cambodia, Cyprus, Georgia, Indonesia, Mexico, Mongolia, Morocco, Nepal, Senegal, Sri Lanka or Tunisia. Fellowship stipends are \$4,200 per month for a maximum of four months. This program is funded by the National Endowment for the Humanities (NEH) under the Fellowship Programs at Independent Research Institutions (FPIRI).

Application: <http://orc fellowships. fluidreview.com>

Deadline: January 31, 2018.

PRE- AND POST-DOCTORAL FELLOWSHIPS

Council of American Overseas Research Centers (CAORC) Multi-Country Research Fellowships:

Open to scholars who already hold a Ph.D. and U.S. doctoral candidates who wish to conduct research of regional or trans-regional significance. Fellowships require scholars to conduct research in more than one country, at least one of which hosts a participating American overseas research center, including CAARI.

Application: <http://orc fellowships. fluidreview.com>

Deadline: January 31, 2018.

2 FELLOWSHIP ANNOUNCEMENTS FOR INSTAP STUDY CENTER FOR EAST CRETE

The INSTAP Study Center for East Crete is happy to announce the availability of the Harriet Boyd Hawes and Richard Seager Fellowships for 2018. Please see our website, www.instapstudycenter.net, for the guidelines and application forms. You can contact Elizabeth Shank with any questions at elizabethshank@hotmail.com.

[Institute for Aegean Prehistory Study Center for East ...](#)
www.instapstudycenter.net

*The INSTAP Study Center for East Crete has instituted an expanded policy for those using the Study Center's facilities. The 2016 Membership Form must be filled ...

Elizabeth Shank, PhD
United States Coordinator
INSTAP Study Center for East Crete
2133 Arch St, Mulberry Atrium, Suite 300
Philadelphia, PA 19103
(215) 496-9914
www.instapstudycenter.net

NEH FELLOWSHIPS

DEADLINE: October 31, 2017

Founded in 1881, the American School of Classical Studies at Athens (ASCSA) is the most significant resource in Greece for American scholars in the fields of Greek language, literature, history, archaeology, philosophy, and art, from pre-Hellenic times to the present. It offers two major research libraries: the Blegen, with over 107,000 volumes dedicated to the ancient Mediterranean world; and the Gennadius, with over 146,000 volumes and archives devoted to post-classical Hellenic civilization and, more broadly, the Balkans and the eastern Mediterranean. The School also sponsors excavations and provides centers for advanced research in archaeological and related topics at its excavations in the Athenian Agora and Corinth, and it houses an archaeological laboratory at the main building complex in Athens. By agreement with the Greek government, the ASCSA is authorized to serve as liaison with the Hellenic Ministry of Culture and Sports on behalf of American students and scholars for the acquisition of permits to conduct archaeological work and to study museum collections.

Since its inception in 1994, the National Endowment for the Humanities (NEH) Fellowship program at the ASCSA has demonstrated its effectiveness by supporting projects for 53 scholars with distinguished research and teaching careers in the humanities.

Eligibility: Postdoctoral scholars and professionals in relevant fields including architecture or art who are US citizens or foreign nationals who have lived in the US for the three years immediately preceding the application deadline. Applicants must already hold their Ph.D. or equivalent terminal degree at the time of application.

Terms: Two to four fellowships, either five or ten months in duration. Stipend for a five-month project, \$21,000; for a ten-month project, \$42,000. Term must coincide with American School's academic year, September to June 2018-2019. School fees are waived, and the award provides lunches at Loring Hall five days per week. The NEH Fellow will pay for travel costs, housing, partial board, residence permit, and other living expenses from the stipend. A final report is due at the end of the award period, and the ASCSA expects that copies of all publications that result from research conducted as a Fellow of the ASCSA be contributed to the relevant library of the School. The NEH Fellow is required to send one copy of all books and electronic copies of articles to the NEH.

NEH Fellows will be expected to reside primarily at the American School of Classical Studies at Athens (though research may be carried out elsewhere in Greece). Please note that the Blegen Library may be closed for 6 months during the spring and/or summer of 2019. Fellows will have access to other libraries of foreign Schools in Athens but should plan accordingly.

Application: Submit Senior "Associate Membership with Fellowship" Application online on the ASCSA web site by October 31. Link to: <http://www.ascsa.edu.gr/index.php/admission-membership/post-doctoral-and-senior-scholars>.

The following items should be attached to the Associate Member application submitted online on the ASCSA web site:

1. Short abstract of the project (up to 300 words).
2. A statement of the project (up to five pages), including desired number of months in Greece, a timetable, explicit goals, a selected bibliography, the importance of the work, the methodologies involved, where applicable, and the reasons it should occur at the ASCSA.
3. Current curriculum vitae, including a list of publications. If not a US citizen, state US visa status /date of residence.
4. Names of three recommenders who will write letters of reference and are individuals familiar with applicant's work and field of interest. Include a list of names, positions, and addresses of the referees. Instruct recommenders to submit letters to application@ascsa.org by November 4. These letters should comment on the feasibility of the project and the applicant's ability to carry it out successfully.

The following criteria will be used by the Selection Committee when considering applications.

1. Are the objectives and approaches clearly stated and coherent?
2. Will the project result in an important and original contribution?
3. Are the research perspectives and methodologies appropriate?
4. Is the projected timetable reasonable for the tenure of the fellowship?
5. What resources are necessary? Does the ASCSA provide resources that are not available at the home institution?
6. Will residence in Greece contribute substantially to the success of the project?

Web site: www.ascsa.edu.gr or <http://www.ascsa.edu.gr/index.php/admission-membership/fellowships-and-grants>

E-mail: application@ascsa.org

The awards will be announced during February. Awardees will be expected to accept the award within two weeks of notification of funding, but no later than March 1.

The American School of Classical Studies at Athens does not discriminate on the basis of race, age, sex, sexual orientation, color, religion, ethnic origin, or disability when considering admission to any form of membership or application for employment.

ΑΝΑΚΟΙΝΩΣΕΙΣ - ANNOUNCEMENTS

FORTHCOMING SHORTCOURSE AT THE

UNIVERSITY OF SHEFFIELD

Dear all,

The Zooarchaeology Team of the University of Sheffield would like to let you know that registrations are now open for Understanding Zooarchaeology I short course.

Understanding Zooarchaeology I short course (17th-19th January 2018) is directed to students, professionals and enthusiasts and does not require any previous knowledge of the discipline.

Animal bones and teeth are among the most common remains found on archaeological sites, and this three-day course will provide participants with an understanding of the basic methods that zooarchaeologists use to understand animal bone evidence. During this course participants will begin to develop the skills necessary to: understand the principles of excavating animal bones; care for and store bones after excavation; identify different species from their bones and teeth; age and sex bones; recognize taphonomy, butchery and pathology; understand how zooarchaeological material is analysed and quantified; interpret site reports and zooarchaeological literature. The teaching will be delivered through short lectures, hands-on practical activities and case studies.

Prices are as follows:

£180 (standard rate)/£120 (student/unwaged rate)

You can contact us at:

zooarch-shortcourse@sheffield.ac.uk

For further information please see:

<https://www.shef.ac.uk/archaeology/research/zooarchaeology-lab/short-course>

Follow us on Facebook at:

<https://www.facebook.com/Sheffield-Zooarchaeology-Short-Course-100619023380021/?ref=hl>

and on Twitter at:

<https://twitter.com/ZooarchLabSheff>

NB This course is not aimed at professional and/or experienced zooarchaeologists. We would be grateful if you could spread the news, as you may know of people who may be interested. Apologies for cross-posting.

Please also note that this course is not run for profit but as educational tools. If any income is generated is reused to enhance our facilities, which are fully available for the use of the general public, at no charge.

With best wishes,

The Sheffield Zooarchaeology Team

BURSARIES FOR THE ASSOCIATION OF ENVIRONMENTAL ARCHAEOLOGY CONFERENCE 2017

The Scottish Archaeological Research Framework (ScARF) project is pleased to announce the availability of a set of bursaries for students/early career researchers to attend the Association of Environmental Archaeology conference 2017. This will be held in Edinburgh from the 1st to the 3rd December 2017. The ScARF bursaries are designed to allow students to hear about current research in archaeology and participate in discussions within the discipline. The ultimate aim is of course that this knowledge is then used within the wider archaeological community of Scotland! The full set of criteria for applying and the form to apply can be found at:

<https://www.socantscot.org/research/scarf-bursaries-available-association-for-environmental-archaeology-conference-2017/>

Please note that applicants need not be studying or working in Scotland, but their research must demonstrate a clear connection to Scotland and/or contain Scottish data. This requirement is in keeping with the remit of the Society of Antiquaries of Scotland and as part of our funding for ScARF (www.scottishheritagehub.com) comes from Historic Environment Scotland.

Please share amongst your scientifically minded colleagues and students, and if anyone has any questions please just email me at emma@socantscot.org.

INTERNET SITES

THE CENTER FOR ANCIENT MIDDLE EASTERN LANDSCAPES (CAMEL) AT THE ORIENTAL INSTITUTE OF THE UNIVERSITY OF CHICAGO ANATOLIAN ATLAS

The Center for Ancient Middle Eastern Landscapes (CAMEL) at the Oriental Institute of the University of Chicago is pleased to present the Anatolian Atlas, an online resource for geographical data related to the archaeology of Anatolia (ancient Turkey):

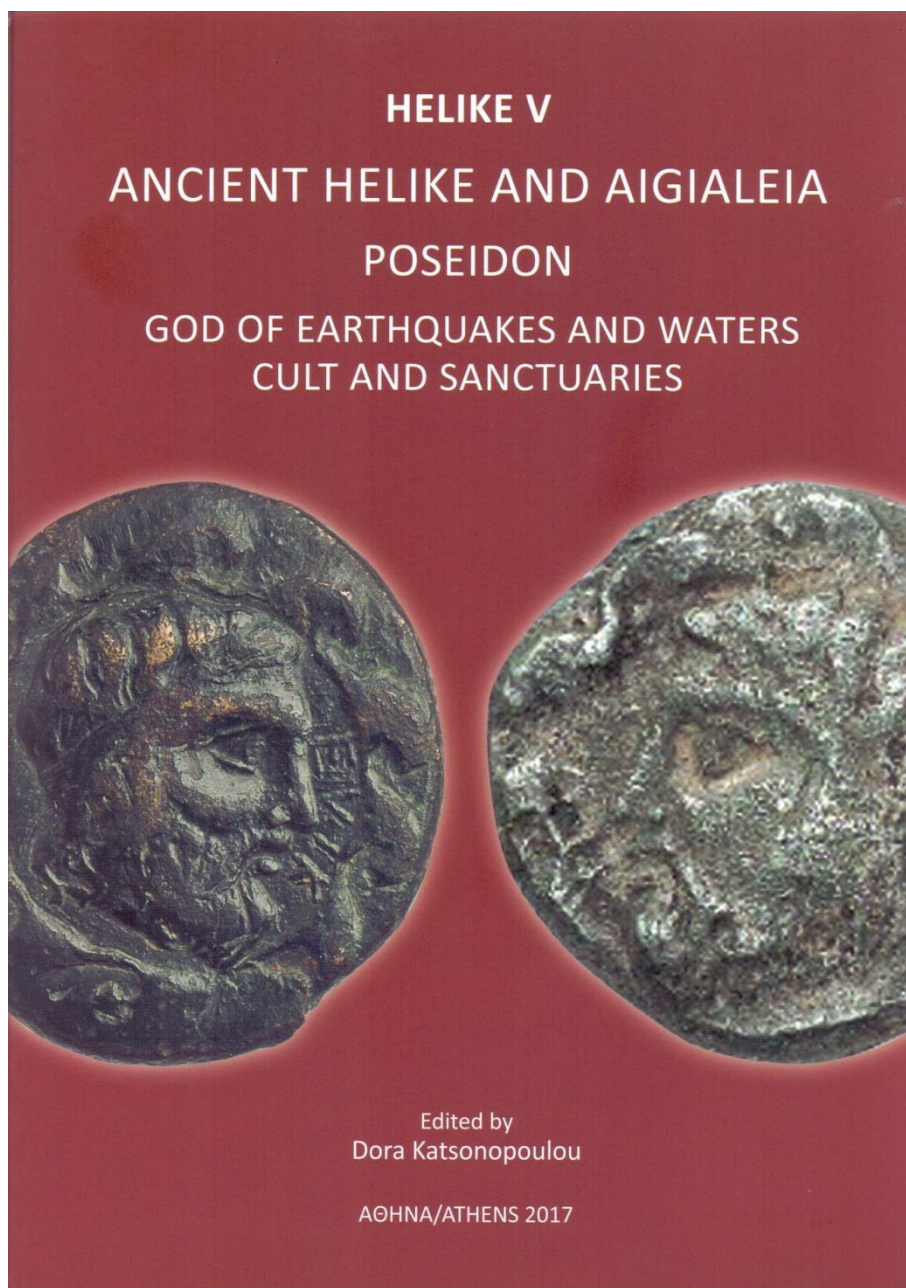
The Anatolian Atlas contains maps (using Google Maps) that display archaeological sites (excavated and surveyed), survey extents, and research projects. Many of the archaeological sites identified in the Anatolian Atlas have citations related to historical geographic and archaeological research. Many sites are also linked to websites that provide more information.

As this is a new project, we welcome any feedback and/or corrections, which can be sent to us in the Comments tab.

Please visit the site: <https://oi.uchicago.edu/research/camel/anatolian-atlas>

ΝΕΕΣ ΕΚΔΟΣΕΙΣ – NEW PUBLICATIONS

**ΝΕΑ ΕΚΔΟΣΗ ΣΤΗ ΣΕΙΡΑ ΠΡΑΚΤΙΚΩΝ
ΔΙΕΘΝΩΝ ΣΥΝΕΔΡΙΩΝ - ANCIENT HELIKE
AND AIGIALEIA**



Κυκλοφόρησε από την Εταιρεία Φίλων της Αρχαίας Ελίκης (ΕΦΑΕΛ), με την επιστημονική επιμέλεια της Προέδρου της Εταιρείας Καθ. Αρχαιολογίας Ντόρας Κατσωνοπούλου, ο πέμπτος τόμος - *Helike V* - της σειράς Πρακτικών Διεθνών Συνεδρίων αφιερωμένων στην Αρχαία Ελίκη και Αιγιάλεια, που οργανώνονται από την ΕΦΑΕΛ σε τακτά χρονικά διαστήματα και πραγματοποιούνται στην περιοχή της Αιγιάλειας. Ο νέος τόμος με τον ειδικότερο τίτλο *Ποσειδών, Ο θεός των Σεισμών και*

των Υδάτων. *Λατρεία και Ιερά*, περιλαμβάνει τις επιστημονικές ανακοινώσεις που παρουσιάστηκαν στη διάρκεια του Ε' Διεθνούς Επιστημονικού Συνεδρίου *Αρχαία Ελίκη και Αιγιάλεια* που πραγματοποιήθηκε στο Αίγιον της Αχαΐας από 4-6 Οκτωβρίου 2013. Ιδιαίτερος στόχος του Συνεδρίου υπήρξε η παρουσίαση (α) των πλέον πρόσφατων στοιχείων για τη λατρεία του Ποσειδώνος στην Ελίκη και άλλες περιοχές της Πελοποννήσου αλλά και στην Ιωνία της Μ. Ασίας, όπου ο θεός λατρευόταν ιδιαίτερα ως *Ελικώνιος* και (β) των σεισμικών φαινομένων, ιδίως του σεισμού του 373 π.Χ., που συνδέονται με την πρωταρχική ιδιότητα του Ποσειδώνος ως θεού των σεισμών και των υδάτων. Το Συνέδριο ακολούθησε μετά το Δ' Διεθνές Συνέδριο της σειράς *Αρχαία Ελίκη και Αιγιάλεια* που πραγματοποιήθηκε τον Σεπτέμβριο του 2007 και ήταν αφιερωμένο στα αποτελέσματα των ανασκαφών του Ερευνητικού Προγράμματος Αρχαίας Ελίκης στον σημαντικό πρωτοελλαδικό (ΠΕ) οικισμό που ανακαλύφθηκε στην περιοχή της Αρχαίας Ελίκης, και ανασκαφών σε άλλους σύγχρονους με την Ελίκη ΠΕ οικισμούς της νότιας και κεντρικής Ελλάδας. Τα Πρακτικά του Συνεδρίου (*Helike IV*) με τον ειδικότερο τίτλο *Πρωτοελλαδικά- Η νότια και κεντρική Ελλάδα*, με την εκδοτική επιμέλεια της Ντόρας Κατσωνοπούλου, δημοσιεύθηκαν από την ΕΦΑΕΛ το 2011.

Ο νέος τόμος (*Helike V*), περιλαμβάνει 16 επιστημονικές ανακοινώσεις που κατανέμονται σε δύο μέρη. Το Μέρος I, με τίτλο *Λατρεία και Ιερά Ποσειδώνος*, περιλαμβάνει 9 άρθρα σχετικά με τη λατρεία του Ποσειδώνος στην Ελίκη και άλλες θέσεις της Πελοποννήσου, και στην Ιωνία της Μ. Ασίας. Το Μέρος II, με τίτλο *Ποσειδών και Σεισμοί: Ελίκη και Κορινθιακός Κόλπος*, περιλαμβάνει 7 άρθρα που αφορούν στην περιοχή της Αρχαίας Ελίκης και στη σεισμική ιστορία του ευρύτερου Κορινθιακού Κόλπου, εστιάζοντας στο αξιοσημείωτο καταστροφικό φαινόμενο του 373 π.Χ. και τις επιπτώσεις του.

Στην πρώτη εργασία του τόμου, Μέρος I, νεώτερα στοιχεία παρουσιάζονται για τη λατρεία του Ποσειδώνος *Ελικωνίου* στην Ελίκη, με βάση τη διαθέσιμη φιλολογική μαρτυρία και τα νέα αρχαιολογικά δεδομένα από τις ανασκαφές του Ερευνητικού Προγράμματος Αρχαίας Ελίκης στην περιοχή (*Dora Katsonopoulou*). Ακολούθως, τα μετρολογικά και εικονογραφικά στοιχεία των γνωστών νομισμάτων της Ελίκης εξετάζονται για πρώτη φορά και συμπεραίνεται ότι αυτά αποτελούν μέρος μιας μοναδικής κοπής γύρω στο 300 π.Χ. (*Robert Weir*). Στο ζήτημα της θέσης του Πανιωνίου, κεντρικού ιερού της Ιωνικής Συμπολιτείας στη Μ. Ασία, όπου λατρευόταν ο *Ελικώνιος* Ποσειδών αναφέρονται τα άρθρα των *Hans Lohmann*, *Hans Lohmann* και *Özge Özgül*, και *Frank Hulek*, με βάση τα νεώτερα αποτελέσματα των ανασκαφών και γεωαρχαιολογικών ερευνών στην περιοχή Çatallar Tere στη Μυκάλη. Ακολούθως, η σημασία των Ομηρικών επιθέτων και τίτλων του Ποσειδώνος *ενοσίγαιος*, *ενοσίχθων* και *γαιήοχος* ερευνώνται σε σχέση και με την προβλεπόμενη καταστροφή του τείχους των Αχαιών στην Ιλιάδα (*Ioannis Petropoulos*), ενώ η ιδιαίτερη σχέση του Ποσειδώνος με την Πελοπόννησο και η λατρεία του στους πρώιμους ιστορικούς χρόνους, σε σχέση και με γεωλογικά καταστροφικά φαινόμενα, είναι το αντικείμενο μελέτης από την *Ελένη Μαράντου*. Η αρχή και η εξέλιξη της λατρείας του Ποσειδώνος στην Τροιζηνία, συμπεριλαμβανομένων της χερσονήσου των Μεθάνων και της νήσου Καλαύρειας παρουσιάζονται διεξοδικά στην επόμενη μελέτη (*Eleni Konsolaki Yannopoulou*), και το ιερό στη Μικρή Δραγονάρα Κυθήρων, όπου λατρευόταν ο Ποσειδών ως *Γαιήοχος*, συζητείται και περιγράφεται από τους *Άρη Τσαραβόπουλο* και *Γκέλη Φράγκου*.

Το Μέρος II, αρχίζει με την παρουσίαση αποτελεσμάτων γεωφυσικών ερευνών στην περιοχή της Αρχαίας Ελίκης (*Grigoris Tsokas et al.*), και πετρογραφικών - γεωχημικών

αναλύσεων της κεραμικής από τον πρωτοελλαδικό οικισμό ((*Ioannis Iliopoulos* και *Vayia Xanthopoulou*)). Στη συνέχεια, μια διαφορετική προσέγγιση παρουσιάζεται για τα πιθανά αίτια καταστροφής της Ελίκης από το σεισμό του 373 π.Χ., σε συνδυασμό με τη χερσαία πλημμύρα ως μέσον καταστροφής (*Nikolaos Kontopoulos*, *Dora Katsonopoulou* και *Asimakis Koutsios*), ενώ σε παρόμοια συμπεράσματα οδηγεί η μελέτη της γεωλογίας της περιοχής που παρουσιάζεται από τον *Κωνσταντίνο Τρίκολα*. Ακολούθως, το καταστροφικό φαινόμενο που συνέβη στην Ελίκη και οι συνέπειές του στον χώρο των Δελφών ανιχνεύονται, μέσα από μια νέα «ανάγνωση» στην αρχιτεκτονική του δελφικού ιερού συνολικά (*Elena Partida*). Τέλος, η παλαιοσεισμολογική ιστορία του ρήγματος των Κεγχρεών στην ανατολική πλευρά του Κορινθιακού επαναπροσεγγίζεται (*Ioannis Koukouvelas* και *Elena Korka*) ενώ η γεωλογική ιστορία των λιμανιών του Λεχαιού και των Κεγχρεών μετά την ύστερη Ρωμαϊκή περίοδο περιγράφεται από τους *Νίκο Μουρτζά* και *Ελένη Κολαϊτή*.

Το βιβλίο διατίθεται από το βιβλιοπωλείο Θεοδώρου “ANDROMEDA BOOKS”.

Email: archeolo@otenet.gr; www.andromedabooks.gr

The new volume *Helike V* is just published by the Helike Society, edited by the Society President Prof. Dora Katsonopoulou. The volume is the fifth in the series of Proceedings of International Conferences on *Ancient Helike and Aigialeia*, organized by the Helike Society and held in the region of Aigialeia about every five years. In the new volume, under the specific title *POSEIDON, God of Earthquakes and Waters. Cult and Sanctuaries* are included 16 scholarly papers presented during the Fifth International Conference on *Ancient Helike and Aigialeia*, which took place in Aigion from 4-6 October, 2013. Main purpose of the Conference was to present (a) the most recent data on Poseidon’s cult in the Helike region and other areas of the Peloponnese, and Ionia in Asia Minor where the god was strongly worshipped as *Helikonios* and (b) seismic phenomena, and especially the 373 BC earthquake in connection with Poseidon’s primordial capacity as god of earthquakes and waters.

The 16 papers of the volume are divided into two parts. Part I, entitled *Cult and Sanctuaries of Poseidon*, includes nine studies on Poseidon’s cult in Helike and other areas of the Peloponnese, also in Ionia of Asia Minor. Part II, entitled *Poseidon and Earthquakes: Helike and the Gulf of Corinth*, contains seven papers on the area of Ancient Helike and the seismic history of the Gulf of Corinth, focusing on the remarkable 373 BC earthquake and its impact.

Part I begins with the presentation of new elements about the cult of Poseidon *Helikonios* in Helike based on available literary evidence and the new archaeological data from excavation work of the Helike Project in the area (*Dora Katsonopoulou*). Next, the metrological and iconographic contexts of all the known Helike coins are for the first time examined and it is concluded that they were part of a small, one-time issue sometime around 300 BC (*Robert Weir*). The next three articles of the volume by *Hans Lohmann*, *Hans Lohmann* and *Özge Özgül*, and *Frank Hulek* about Panionion, the central sanctuary of the Ionian League in Asia Minor, where Poseidon was worshipped as *Helikonios*, present the latest evidence on its location from archaeological excavations and geoarchaeological research conducted at Mt. Çatallar Tepe in the Mykale region. The meaning of the Homeric epithets and titles of Poseidon *enossigaios*, *enosichthon*, and *gaieochos* is explored next by *Ioannis Petropoulos*, and Poseidon’s special connection with the Peloponnese and his cult in the early historic times is analysed by *Ελένη Μαράντου*. The beginning and the development of Poseidon’s cult in Troezenia are

presented in detail in the following study by *Eleni Konsolaki Yannopoulou*, and the sanctuary of Poseidon *Gaieochos* in Mikri Dragonara of the island of Kythera is next described by *Άρης Τσαραβόπουλος* and *Γκέλη Φράγκου*.

Part II begins with the presentation of the results of geophysical prospection at the Mycenaean cemetery in the area of Ancient Helike (*Grigoris Tsokas et al.*) and of petrographic and geochemical analyses of pottery from the Early Helladic Helike settlement (*Ioannis Iliopoulos* and *Vayia Xanthopoulou*). A different approach is next presented regarding the possible causes of Helike's natural destruction in 373 BC in conjunction with terrestrial flooding as a medium of catastrophe (*Nikolaos Kontopoulos, Dora Katsonopoulou* and *Asimakis Koutsios*) while similar conclusions are reached via the geological study of the area by *Κωνσταντίνος Τρίκολας*. The 373 BC catastrophe and its impact at the site of Delphi are investigated next via a new 'reading' of the architecture of the sanctuary as a whole by *Elena Partida*. The last papers of the volume refer to the eastern part of the Gulf of Corinth. Initially, the palaeoseismological history of the Kenchreai Fault in Korinthia is re-considered by *Ioannis Koukouvelas* and *Elena Korka*, and next, the geological history of the ports of Lechaion and Kenchreai after the late Roman period is presented by *Νίκος Μουρτζάς* and *Ελένη Κολαΐτη*.

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

EIAHΣEIZ - NEWS RELEASE

REMAINS OF DECAPITATED TOADS FOUND IN A JAR IN A 4,000-YEAR-OLD TOMB

The research, launched by the Israel Antiquities Authority in cooperation with academic institutions, also revealed evidence of cultivation of date palms and myrtle bushes

Why were decapitated toads placed in a jar in a 4,000-year-old tomb in Jerusalem? Fascinating findings from an Israel Antiquities Authority excavation near the Jerusalem Biblical Zoo shed light on burial customs in the Canaanite period (the Middle Bronze Age). The archaeological excavation, which took place in 2014 with funding from the Housing Ministry (the Arim Urban Development Company) prior to the expansion of the Mana?at neighborhood, yielded the remains of at least nine toads, and evidence of the cultivation of date palms and myrtle in the area.

In the new research, to be presented for the first time at the conference “New Studies in the Archaeology of Jerusalem and its Region,” remains that were found in vessels placed in the tomb as funerary offerings were examined. The examination, using advanced scientific methods, was a cooperative effort among various academic institutions, led by Shua Kisilevitz and Zohar Turgeman-Yaffe of the Israel Antiquities Authority, with Dr. Dafna Langgut of Tel Aviv’s Institute of Archaeology and Steinhardt Museum of Natural History, Dr. Lior Weisbrod of the Zinman Institute of Archaeology at the University of Haifa, Dr. David Ilan, director of the Nelson Glueck School of Biblical Archaeology at the Hebrew Union College and Nathan Ben-Ari of the Israel Antiquities Authority.

According to the excavation directors on behalf of the Israel Antiquities Authority, Shua Kisilevitz and Zohar Turgeman-Yaffe: “This section of the Nahal Repha’im basin was fertile ground for settlement throughout time, especially during the Canaanite period. In recent years excavations in the area have uncovered two settlement sites, two temples and a number of cemeteries, which provide new insight into the life of the local population at that time.” According to Kisilevitz and Turgeman-Yaffe: “For an archaeologist, finding tombs that were intentionally sealed in antiquity is a priceless treasure, because they are a time capsule that allows us to encounter objects almost just as they were originally left. At that time, it was customary to bury the dead with offerings that constituted a kind of “burial kit,” which, it was believed, would serve the deceased in the afterworld. When we removed the stone that blocked the tomb opening, we were excited to discover intact bowls and jars. In one of the jars, to our surprise, we found a heap of small bones.

The study of the bones, by Dr. Lior Weisbrod of the University of Haifa, revealed at least nine toads. Interestingly, they had been decapitated.” Another intriguing finding came to light through analysis of sediments collected from the clay jars and examined under a microscope. The examination, by Dr. Dafna Langgut of Tel Aviv University, revealed that shortly before the vessels were placed in the tomb, they came into contact with various plants including date palms and myrtle bushes. This fact is interesting because this is not the natural habitat for those species, and they therefore seem to have been planted here intentionally. According to Dr. Langgut, in this period the date palm

symbolized fertility and rejuvenation, which could explain why the ancients cultivated the trees in this environment, where they do not grow naturally.

According to the scholars, these plants may have been part of an orchard planted in an area where funeral rituals were held, during which offerings of food and objects were made to the deceased. The scholars surmise that the jar with the headless toads was among these offerings.

The research will be presented for the first time on Thursday, October 18, at the conference “New Studies in the Archaeology of Jerusalem and its Region,” open to the public, at the Hebrew University of Jerusalem.

Please visit the site:

http://www.antiquities.org.il/Article_eng.aspx?sec_id=25&subj_id=240&id=4313

CITRUS: FROM LUXURY ITEM TO CASH CROP

Citrus fruits were the clear status symbols of the nobility in the ancient Mediterranean, TAU researcher says

New research from Tel Aviv University reveals that citrons and lemons were clear status symbols for the ancient Roman ruling elite and plots the route and evolution of the citrus trade in the ancient Mediterranean.

The study is based on a collection of ancient texts, art, artifacts, and archaeobotanical remains such as fossil pollen grains, charcoals, seeds, and other fruit remnants. It was led by archaeobotanist Dr. Dafna Langgut of TAU's Institute of Archaeology and The Steinhardt Museum of Natural History and recently published in HortScience.

Until the first century AD, the only citrus produce available to the ancient Romans were the extremely rare and inordinately expensive citrons and lemons. "Today, citrus orchards are a major component of the Mediterranean landscape and one of the most important cultivated fruits in the region. But citrus is not native to the Mediterranean Basin and originated in Southeast Asia," Dr. Langgut said.

"My findings show that citrons and lemons were the first citrus fruits to arrive in the Mediterranean and were status symbols for the elite. All other citrus fruits most probably spread more than a millennium later for economic reasons."

The first Roman lemon?

At first the Romans only had access to rough-skinned citrons, also known as etrogim — mostly rind and dry, tasteless flesh. The citron arrived in Rome from what is now Israel. The earliest botanical remains of the citron were identified in a Persian royal garden near Jerusalem and dated to the 5th-4th centuries BC. It is presumed that it spread from there to other locations around the Mediterranean.

"The first remains of the earliest lemon, found in the Roman Forum, date to right around the time of Jesus Christ, the end of the first century BC and early first century AD," said Dr. Langgut. "It appears that the citron was considered a valuable commodity due to its healing qualities, symbolic use, pleasant odor and rarity. Only the rich could have afforded it. Its spread therefore was helped more by its high social status, its significance in religion and its unique features, rather than its culinary qualities."

According to Dr. Langgut, sour oranges, limes and pomelos were introduced to the West by Muslim traders via Sicily and the Iberian Peninsula much later, in the 10th century AD.

Muslim trade routes

"It is clear that Muslim traders played a crucial role in the dispersal of cultivated citrus in Northern Africa and Southern Europe," Dr. Langgut said. "It's also evident because the

common names of many of the citrus types were derived from Arabic, following an earlier diversification in Southeast Asia. Muslims controlled extensive territory and commerce routes from India to the Mediterranean."

According to the research, the sweet orange associated with Israel today only dates as far back as the 15th century and was the product of a trade route established by the Genoese and, later, the Portuguese. The sticky-sweet mandarin was introduced to the Mediterranean only in the beginning of the 19th century.

"It wasn't until the 15th century that the sweet orange arrived on European tables. By the time mandarins appeared in the 19th century, citrus fruits were considered commonplace," said Dr. Lanngut. "They were cash crops rather than luxury items."

The researcher is currently determining which plants were grown in the gardens of Herod the Great's palaces, with the support of the Israel Science Foundation.

Please visit the site: <https://www.aftau.org/news-page-archaeology?=&storyid4677=2347&ncs4677=3&erid=6686858&trid=b2ee032f-6135-48b0-ab7a-7b572b813668>

ANCIENT TEXTILES REVEAL DIFFERENCES IN MEDITERRANEAN FABRICS IN THE 1ST MILLENNIUM BC

Textiles represent one of the earliest human craft technologies and applied arts, and their production would have been one of the most important time, resource and labour consuming activities in the ancient past.

In archaeological contexts, textiles are relatively rare finds, especially in Mediterranean Europe where conditions are unfavourable for organic material preservation. Many archaeological textile fragments do, however, survive in mineralised form, which forms the basis of a new study published today in *Antiquity*.

Detailed analysis of several hundred textile fragments has provided, for the first time, a much more detailed definition of the textile cultures in Italy and Greece during the first half of the first millennium BC.

According to Dr Margarita Gleba, the study's author and researcher at the McDonald Institute for Archaeological Research, University of Cambridge, "Luckily for us, during the Iron Age (c. 1000-400 BC) people were buried with a lot of metal goods such as personal ornaments, weapons and vessels. These metals are conducive to the preservation of textiles as the metal effectively kills off the micro-organisms which would otherwise consume the organic materials, while at the same time metal salts create casts of textile fibres, thereby preserving the textile microstructure."

"This is how we get such a large number of textiles, even though they only exist now in tiny fragments. Through meticulous analysis using digital and scanning electron microscopy, high performance liquid chromatography and other advanced methods we are able to determine a lot of information including the nature of the raw materials and structural features such as thread diameter, twist direction, type of weaving or binding, and thread count."

The technical differences suggest that during the Iron Age, textiles in Italy more closely resembled those found in Central Europe (associated with the Hallstatt culture that was prevalent in modern-day Germany, Austria and Slovenia) while the textile culture of Greece was largely connected with the Near East.

Dr Gleba added, "There is overwhelming evidence for frequent contact between Italy and Greece during the first half of the first millennium BC, but this evidence shows that their textile traditions were technically, aesthetically and conceptually very different. This means that the populations in these two regions are making an active decision to clothe themselves in a certain way and it may have to do with traditions set up already in the Bronze Age."

"Textiles have been and still are widely considered one of the most valuable indicators of individual and group identity. Even in societies today, we frequently form opinions of others based on the type of cloth they are wearing: tweed is associated with Irish and

British country clothing, cashmere with Central Asia and silk with the Far East for example."

"Curiously, by Roman times, the establishment of Greek colonies in southern Italy and more general oriental influences observed in material culture of Italic populations leads towards gradual disappearance of the indigenous textile tradition. Our future research will attempt to understand the cause behind this change in textile culture."

Please visit the site: https://www.eurekaalert.org/pub_releases/2017-09/uoc-atr092217.php

LOST CITY IN IRAQ FOUNDED BY ALEXANDER THE GREAT DISCOVERED BY ARCHAEOLOGISTS - DRONE PHOTOGRAPHY USED TO UNEARTH DORMANT RUINS, BY NIAMH MCINTYRE

Archaeologists in Iraq have discovered a city which was lost for more than 2,000 years with the help of drone photography and declassified intelligence images.

Qalatga Darband, which is believed to have been founded in 331 BC by Alexander the Great, was discovered by a team of Iraqi and British archaeologists led by experts from the British Museum.

John MacGinnis, who is leading the team on the ground, told The Times: “It’s early days, but we think it would have been a bustling city on a road from Iraq to Iran. You can imagine people supplying wine to soldiers passing through.”

The site of initially came to the attention of archaeologists following the release of declassified CIA satellite photos from the 1960s, which appeared to show the outline of ruins.

Dr MacGinnis and his colleagues then used drones to discover the outlines of buildings which have lain beneath the ground for centuries.

Greek coins, and statues of Greco-Roman deities, have also been found at the site in Iraqi Kurdistan.

Staff from the British Museum have been training Iraqi heritage experts in a government-funded scheme designed to help archaeologists protect sites of historical significance in areas of the Middle East which have been severely impacted by conflict.

The Emergency Heritage Management Training Programme have trained workers in advanced techniques including global positioning systems, satellite imagery and geophysics.

Iraqi heritage services have been severely impacted by the chaos that followed the US-led invasion of Iraq in 2003.

Isis have destroyed a number of historical sites for propaganda purposes, including large parts of the ancient Assyrian City of Niveneh and the Temple of Baalshamin in Palmyra.

In June, militants destroyed the Great Al-Nuri Mosque in Mosul, where three years ago the group’s leader, Abu Bakr al-Baghdadi, declared himself the leader of a new Islamic caliphate.

Please visit the site: <http://www.independent.co.uk/news/world/asia/lost-city-iraq-alexander-great-founded-discover-archaeologists-qalatga-darband-a7965651.html>

RARE ARTIFACTS AND COMPLEX FEATURES IN ARCHITECTURE FOUND IN MINOAN PALACE ON CRETAN MOUNTAIN

Staircases, richly decorated walls and important artifacts are among the findings of this past season's excavations at the extensive and complex Minoan palace of Zominthos, on the Psiloritis mountain in central Crete, Greece's Ministry of Culture and Sports announced Monday.

The excavations on the palace were carried out by emerita director of antiquities Efi Sapouna-Sakellarakis from July to August. Excavations on a section of the palace began in the '80s by archaeologist Yiannis Sakellarakis, and have been conducted annually since 2004. The ministry announced that the new evidence revealed by this summer's excavations includes data about "the complex's internal layout and its architecture (staircases, rich wall decorations), with multiple findings from the excavation of the interior and its rooms, where a very rare coin was found from Marcus Aurelius' reign (161-180 AD). All elements point to the significance of this huge, labyrinthine building at an altitude of 1,200 meters."

Among the new data unearthed during this season, according to the Culture ministry, are two new entrances, one in the NE corner of the palace leading through a hallway to the eastern wing's shrine, and the other - damaged by alterations in the Mycenaean and Roman years and by looters in the 60s - leading to the palace's main court.

The palace appeared to have multiple levels, internal staircases, floors constructed of precious materials and walls lavishly decorated. Some of the walls have survived to a height of three meters. Palace rooms have yielded stamps, vessels in different shapes, stone cases for valuables, a local reproduction of an Egyptian scarab made of copper, and seashells that were not meant for consumption, pointing to the worship of a sea goddess. Other findings feature bronze daggers, sections of large ceramic storage jars, and remains of beehives. The date of the earliest settlement on Zominthos (around 1900 BC), almost coinciding with the first settlement in the Knossos area, and its proximity to the Idaean Cave, the most important and perhaps earliest shrine on Crete, point to the significance of the palace in the economic, political and religious network of the Greek island.

About Minoan civilization

The Minoan civilization was an Aegean Bronze Age civilization on the island of Crete and other Aegean islands which flourished from about 2600 to 1100 BC. It preceded the Mycenaean civilization of Ancient Greece. The civilization was rediscovered at the beginning of the 20th century through the work of British archaeologist Arthur Evans. It has been described as the earliest of its kind in Europe, with historian Will Durant calling the Minoans "the first link in the European chain".

The term "Minoan", which refers to the mythical King Minos, originally described the pottery of the period. Minos was associated in Greek mythology with the labyrinth and the Minotaur, which Evans identified with the site at Knossos (the largest Minoan site). According to Homer, Crete once had 90 cities.

The Minoan period saw trade between Crete and Aegean and Mediterranean settlements, particularly the Near East. Through their traders and artists, the Minoan cultural influence reached beyond Crete to the Cyclades, Egypt's Old Kingdom, copper-bearing Cyprus, Canaan and the Levantine coast, and Anatolia. Some of its best art is preserved in the city of Akrotiri on the island of Santorini, which was destroyed by the Thera eruption.

Although the Minoan language and writing systems (Linear A) remain undecipherable and are subjects of academic dispute, they apparently conveyed a language entirely different from the later Greek. The reason for the end of the Minoan period (around 1400 BC) is unclear; theories include Mycenaean invasions from mainland Greece and a volcanic eruption of Thera.

Please visit the site: <http://www.tornosnews.gr/en/greek-news/culture/27244-complex-architectural-features-and-rare-artifacts-found-in-minoan-palace-excavations-on-cretan-mountain.html>

THE PHOENICIAN ALPHABET IN ARCHAEOLOGY - WHAT DID THE PHOENICIANS RECORD WITH THEIR INNOVATIVE SCRIPT? BY JOSEPHINE QUINN

"These Phoenicians who came with Cadmus brought with them to Greece, among many other kinds of learning, the alphabet, which had been unknown before this, I think, to the Greeks."-Herodotus 5.58

Herodotus's story of the foundation of Greek Thebes by the Tyrian prince Cadmus may be more myth than history, but the detail about the alphabet is true: in fact, the Phoenician script was borrowed by the Greeks and then the Romans, as well as the Israelites.

Our first examples of the Phoenician alphabet-technically an abjad, containing only consonants-appear around the 11th century B.C.E. It was not the first writing system of this kind: 200 years earlier, the people of Ugarit a little further up the Syrian coast used a cuneiform alphabet (including some indication of vowels) to write their local language, and the Phoenician script itself seems to derive from an abjad in use in the Sinai peninsula in the early second millennium B.C.E., which adapted Egyptian hieroglyphic signs.

These new scripts were a real improvement on contemporary syllabic writing systems. The major benefit of alphabets, where letters represent individual sounds rather than syllables, is that they need far fewer signs to reproduce the same words. There are 22 letters in Phoenician, and 24 in ancient Greek, but the Akkadian syllabic script has close to 1,000 signs. This makes it much easier for people to learn alphabetic scripts: they bring reading and writing from the province of specialist scribes into the grasp of anyone lucky enough to get a good basic education.

What did Phoenicians use this new technology to record? The truth is that we don't really know. We have more than 10,000 inscriptions in Phoenician, from all over the Mediterranean, but almost all are short and formulaic, recording dedications to the gods, the deaths of friends and family members, or occasional brief magical texts. There are exceptions: the cities of Byblos and Sidon, for instance, have yielded some longer royal funerary inscriptions, with occasional details of mighty conquests and magnificent building programs, but mostly given over to curses heaped upon anyone daring to disturb the tomb.

This is a very different picture from that we find in ancient Ugarit, where large archives preserve a much larger set of genres in the local script: accounts, legal documents, letters, epic literature, ritual and religious texts, astrology, divination, magic, and a small number of works on horse medicine. The problem is in part the Phoenician alphabet itself: unlike the cuneiform script of Ugarit, made up of wedges pressed into clay tablets, its linear nature was best suited to writing in ink on papyrus or parchment. Such materials only

survive in extremely dry environments, such as the Egyptian desert, and so many Phoenician documents are now lost.

Ancient writers give us tantalizing glimpses of a wider world of Phoenician documentation: the first-century C.E. Jewish historian Josephus tells us, for instance, that Tyre kept archives going back to the time of King Hiram, who helped King Solomon build the temple in Jerusalem, and claimed that they even held letters sent between the kings, as well as records of the city's history. Josephus had not, however, consulted these archives directly, and until very recently there were no known texts from Phoenician-language archives in the eastern Mediterranean. At Carthage, excavations carried by the University of Hamburg from 1989-1993 uncovered a building full of document seals, ironically preserved by the fire that destroyed the city, but none of the 5,000 or so papyrus documents to which they must once have been attached had survived.

Now, however, excavations at the inland city of Idalion on Cyprus by Dr. Maria Hadjicosti of the Department of Antiquities have finally brought to light a large archive of Phoenician texts, preserved because they were written not on perishable materials but on fragments of marble, stone, and pottery. These texts are now being studied in Nicosia by Professor Maria Giulia Amadasi Guzzo of the Sapienza University of Rome and Dr. José Ángel Zamora López of the Spanish National Research Agency, who have published their preliminary findings in Italian in the latest issue of the journal *Semitica et Classica*.

The new documents were found in a fortified palace complex on Idalion's western acropolis, and they all date to the fifth and fourth centuries, a period in which Idalion was under the power of the Phoenician-speaking kingdom of Kition to its south. This explains why the vast majority of the texts found, more than 700, are written in Phoenician, though there are also around 30 in Cypro-Syllabic, the main script used on Cyprus in this period. These documents aren't easy to study: while they may be written on durable materials, they are found in fragments, the ink is often poorly preserved, and the unusual cursive handwriting is hard to read. The texts also preserve a large number of previously unknown letter forms, words, and schematic formulas. Nonetheless, the preliminary work of decoding is now complete.

Unlike the historical archives Josephus reports at Tyre, the material preserved at Idalion is almost all administrative, sets of accounts relating to palace bureaucracy and the organization of agriculture. It sheds dramatic new light on the life, culture, economy, and political relations of Phoenician-speakers on the island of Cyprus. More broadly, these lists of figures, products, and their recipients are slowly building up, for the first time, a picture of the day to day workings of a Phoenician palace economy. There are also intriguing glimpses of personal life: a fragment of a letter, and some texts about religious and social rituals that situate the small world of Idalion in a wider Levantine context, and demonstrate the vitality of cultural links between different areas in the eastern Mediterranean.

One thing missing at Idalion is literary texts. This may seem surprising, given the rich trove of mythical texts found at Ugarit, as well as the contemporary example of the Hebrew Bible and the development in Greece in the same period of the great Homeric epics. Perhaps Phoenician literature will emerge in future excavations and new archives-or, perhaps, as is often assumed, it was all written on perishable materials, and has simply

been destroyed by time. But there is no evidence from other sources either that the Phoenicians wrote down their myths and stories. There are plenty of references to technical and scientific works composed in Phoenician-arithmetic, astronomy, and philosophy-but none to literature as we would recognize it until well into the Roman period.

Perhaps Phoenicians never wrote the kind of stories that their neighbors made famous. One striking characteristic of the literature produced by Israelites and Greeks is that it often celebrates their identity as a group larger than a city-state, participating in joint expeditions and events over long distances-from the Israelite exodus from Egypt, to the Greek army attacking Troy, to the verses that celebrate victories at pan-Hellenic competitions. The Phoenicians, living in separate city-states with no common political or cultural identity, may simply have had no need for such tales.

Josephine Quinn is Associate Professor in Ancient History at the University of Oxford. Her research focuses on the ancient Mediterranean world, and her new book *In Search of the Phoenicians* (Princeton Univ. Press) will be out in December. She co-directs the Tunisian-British excavations at Utica (Tunisia) and the Oxford Centre for Phoenician and Punic Studies.

Please visit the site: <https://www.biblicalarchaeology.org/daily/biblical-artifacts/inscriptions/the-phoenician-alphabet-in-archaeology/>

KUWAITI ARCHAEOLOGISTS DISCOVER RARE ARABIC MANUSCRIPTS IN MOUNT ATHOS, BY THEO IOANNOU

A Kuwait University archaeological team has discovered rare manuscripts written in Arabic at Mount Athos in Greece.

The archaeological mission, which included history Professors Dr Abdulhadi Al Ajmi and Dr Mohammad Al Marzouqi, visited monasteries and libraries in northern Greece.

They were able to unearth these documents at the historic mountain, which represented around 1,800 years of Christian history.

Dr Al Ajmi said that the discovery at Mount Athos, an ancient sacred place chosen as one of UNESCO's World Heritage sites in 1988, was crucial to understand the history of Arabs and Muslims in the region.

“Getting approval from the Greek authorities to study the site was not an easy task but we managed to do so and the reward was beyond great,” he told the Kuwait New Agency.

He pointed out that the manuscripts, which date back to the golden Islamic age, cover various subjects pertaining to daily events, scientific observations, religious affairs and more.

He affirmed that the new discoveries will become an important reference point to those interested in what Arabs and Muslims had offered to Greece in the olden days.

Please visit the site: <http://greece.greekreporter.com/2017/09/16/kuwaiti-archaeologists-discover-rare-arabic-manuscripts-in-mount-athos/> [Go there for pict]

CARBON DATING REVEALS EARLIEST ORIGINS OF ZERO SYMBOL

Carbon dating shows an ancient Indian manuscript has the earliest recorded origin of the zero symbol.

The Bakhshali manuscript is now believed to date from the 3rd or 4th Century, making it hundreds of years older than previously thought.

It means the document, held in Oxford, has an earlier zero symbol than a temple in Gwalior, India.

The finding is of "vital importance" to the history of mathematics, Richard Ovenden from Bodleian Libraries said.

The zero symbol evolved from a dot used in ancient India and can be seen throughout the Bakhshali manuscript.

Other ancient cultures like the Mayans and Babylonians also used zero symbols, but the dot the Bakhshali manuscript developed a hollow centre to become the symbol we use today.

It was also only in India where the zero developed into a number in its own right, the Bodleian Libraries added.

Earlier research had dated the Bakhshali manuscript to the 8th and 12th century, but now carbon dating has shown it to be centuries older.

Bodleian Libraries said scholars had previously struggled to date it because it is made of 70 leaves of birch bark and composed of material from three different periods.

The manuscript was found by a farmer in a village called Bakhshali, in what is now Pakistan, in 1881 before being acquired by the indologist Rudolf Hoernle, who presented it to the Bodleian Libraries in 1902.

The creation of zero was one of the "greatest breakthroughs" in mathematics, Prof Marcus Du Sautoy of the University of Oxford said.

Please visit the site: <http://www.bbc.com/news/uk-england-oxfordshire-41265057>

LARGE MYCENAEAN-ERA ENGRAVED TOMB UNEARTHED IN ORCHOMENOS, SOUTH-CENTRAL GREECE - THE BRONZE AGE GRAVE SHOWS NOBLEMAN'S LOVE OF JEWELRY

One of the largest Mycenaean-era carved tombs ever discovered in Greece has been located in Orchomenos in Viotia, the culture ministry announced on Monday. The discovery was made in Prosilio, near Orchomenos, during the first year of a five-year cooperation programme between the Viotia Antiquities Ephorate and the British School at Athens (BSA) and Cambridge University."

Specifically, the tomb is the ninth-largest chamber tomb out of roughly 4,000 excavated in the last 150 years," the culture ministry announced.

The tomb is of monumental size and artfully constructed, it includes a large death chamber measuring 42 metres square with a 20-metre carved 'road' leading up to it. On all four walls of the chamber is a carved ledge covered in clay plaster, while the initial height of the roof is estimated to have been 3.5 metres high.

There is evidence that this roof began to collapse very early after construction, possibly even during the Mycenaean era, giving the tomb a cave-like aspect and a total height of 6.5 metres. The collapse disturbed the position of the body and objects inside but then covered and protected the tomb from later interference.

Greece's Culture Ministry says the 3,350-year-old chamber near Orchomenos, an important center of the Mycenaean era, belonged to a man who was 40 to 50 years old when he died, surrounded by carefully chosen grave goods. These included tin-lined vessels, horses' reins, bow parts, arrows, pins, jewellery, combs, a seal and a seal ring.

Best collections of confirmed burial goods.

The tomb is dated to the middle of the 14th century B.C. and has yielded some of the best collections of confirmed burial goods from the palace period of mainland Greece. The discovery of a single burial with important finds is exceptionally rare, since Mycenaean chamber tombs tended to be reused for multiple burials across generations, so that grave goods were disturbed or looted. The Prosilios tomb is exceptional in that all the items found were linked to the single dead body buried there, giving archaeologists greater insights into burial practices of the period.

One example is the discovery of several items of jewellery in the tomb, as in that of the Pylos warrior found in 2015, casts doubt on the previously held belief that jewellery was mainly used in the burials of women.

The tomb is believed to be linked to the nearby Orchomenos palace complex that dominated the area during the 14th and 13th centuries B.C. and to belong to a member of the upper social classes of the time.

In charge of the excavations are Dr. Alexandra Charami, chief of the Viotia Antiquities Ephorate, and Dr. Yiannis Galanakis of Cambridge University. The Mycenaean civilization was located in the northeast Peloponnese, approximately 200 kilometers from the current site, and flourished on the Greek mainland prior to roughly 1200 BC.

About Orchomenus

Orchomenus (Ancient Greek: Ὀρχομενός Orchomenos), the setting for many early Greek myths, is best known as a rich archaeological site in Boeotia, Greece, that was inhabited from the Neolithic through the Hellenistic periods. Orchomenus is also referenced as the "Minyean Orchomenus" in order to distinguish the city from the "Arcadian Orchomenus".

According to the founding myth of Orchomenos, its royal dynasty had been established by the Minyans, who had followed their eponymous leader Minyas from coastal Thessaly to settle the site. In the Bronze Age, during the fourteenth and thirteenth centuries, Orchomenos became a rich and important centre of civilisation in Mycenaean Greece and a rival to Thebes. The palace with its frescoed walls and the great tholos tomb show the power of Orchomenos in Mycenaean times. A massive hydraulic undertaking drained the marshes of Lake Copaïs making it a rich agricultural area.[2] Like many sites around the Aegean, Orchomenos was burned and its palace destroyed in ca. 1200 BC.

Orchomenos is mentioned among the Achaean cities sending ships to engage in the Trojan War in Homer's "Catalogue of Ships" in the Iliad: together with Aspledon, they contributed thirty ships and their complement of men.

Orchomenos seems to have been one of the city-states that joined the Calaurian maritime League in the seventh century BC.[3] Although their rivals Thebes confirmed their supremacy by the end of the century reflected by inscriptions, Orchomenos joined the Theban-led Boeotian League in ca. 600 BC.[4]

Classical Orchomenos was known for its sanctuary of the Charites or Graces, the oldest in the city, according to Pausanias (5.172–80); the Byzantine (9th century) monastery church of Panaghia Skripou probably occupies the long-sacred spot.[5] Here the Charites had their earliest veneration, in legend instituted by Eteocles; musical and poetical agonistic games, the Charitesia,[6] were held in their honour, in the theatre that was discovered in 1972.[7] The Agrionia, a festival of the god Dionysus, involved the ritual pursuit of women by a man representing Dionysus. Orchomenos struck its coinage from the mid-sixth century.

In 480–479 BC, the Orchomenians joined their neighbouring rivals the Thebans to turn back the invading forces of Xerxes in the Greco-Persian Wars. In mid-century, Orchomenos sheltered the oligarchic exiles who freed Boeotia from Athenian control. In the fourth century the traditional rivalry with Thebes made Orchomenos an ally of Agesilaus II and Sparta against Thebes, in 395 and again in 394 BC. The Theban revenge after their defeat of Sparta in the battle of Leuctra (371 BC) was delayed by the tolerant policies of Epaminondas:[8] the Boeotian League sacked Orchomenos in 364 BC. Although the Phocians rebuilt the city in 355 BC, the Thebans destroyed it again in 349. The broad plain between Orchomenos and the acropolis of Chaeronea witnessed two

battles of major importance in Classical antiquity. In 338 BC, after a whirlwind march south into central Greece, Philip II of Macedon defeated Thebes and Athens on the plain of Chaironeia during the First Battle of Chaeronea, establishing Macedonian supremacy over the city-states, and demonstrated the prowess of Philip's young son Alexander the Great. During Alexander's campaign against Thebes in 335 BC, Orchomenos took the side of the Macedonians. In recompense, Philip and Alexander rebuilt Orchomenos, when the theatre and the fortification walls, visible today, were constructed.

The Second Battle of Chaeronea occurred when Roman forces under Lucius Cornelius Sulla defeated those of King Mithridates VI of Pontus near Chaeronea, in 86 BC during the First Mithridatic War. This Second Battle of Chaeronea was followed by the Battle of Orchomenos, when Archelaus' forces were completely destroyed.

Orchomenos remained a small town until Late Roman times, when the theatre was still in use, and afterwards.

Archaeology in Orchomenos

Most excavations have focussed on the early and Mycenaean areas of the lower town, while the later Hellenistic city on the acropolis remains largely unexplored.

In 1880–86, Heinrich Schliemann's excavations (H. Schliemann, *Orchomenos*, Leipzig 1881) revealed the tholos tomb he called the "Tomb of Minyas", a Mycenaean monument that equalled the "Tomb of Atreus" at Mycenae itself. In 1893, A. de Ridder excavated the temple of Asklepios and some burials in the Roman necropolis. In 1903–05, a Bavarian archaeological mission under Heinrich Bulle and Adolf Furtwängler conducted successful excavations at the site. Research continued in 1970–73 by the Archaeological Service under Theodore Spyropoulos, uncovering the Mycenaean palace, a prehistoric cemetery, the theatre and other structures. The Tomb of Minyas is one of the greatest burial monuments of the Mycenaean period.[10] The tomb was probably built for the members of the royal family of Orchomenos in 1250 BC and was plundered in antiquity. The monument was visible for many centuries after its original use and even became a place of worship in the Hellenistic period. It was probably a famous landmark until at least the second century AD, when Pausanias visited Orchomenos and described the tholos in detail.[11] It had a dromos thirty metres long. Its entrance was built of dark grey Levadhia marble and had a wooden door. The lintel, still in place today, is six metres long and weighs several tons. The entrance and the chamber were decorated with bronze rosettes as shown by the attachment holes on the walls and the ceiling of the side chamber is decorated with spirals and floral motifs in relief. In the centre of the Tholos, a rectangular burial monument dates to the Hellenistic period (323–30 B.C.). It was partially restored by the architect-archaeologist A. Orlandos. In 1994, the Hellenic Ministry of Culture undertook restoration work consisting mainly of drainage and strengthening of the walls of the side chamber.

The Neolithic remains found at Orchomenos were first thought to be in situ (Bulle 1907) but it later appeared that they consisted of fill in a levelling deposit (Kunze 1931; Treuil 1983). Thus the associated round houses (two to six metres in diameter) were in fact from the Early Bronze Age (2800–1900 BC). Later in that period, houses were apsidal.

The Mycenaean palace to the east of the Tholos tomb and lying partially underneath the church is only partially excavated and consists of three wings, some of which were decorated with frescoes. The palace was destroyed c. 1200 BC.

The fortification walls of Orchomenos were built in the 2nd half of the 4th century B.C. under the Macedonians and crown the east end of mount Akontion. The theatre was built around the end of the 4th century BC. The cavea, with seats for the spectators, the orchestra and part of the scena are all preserved. It was in use until late Roman times (4th century AD).

Please visit the site: <http://www.tornosnews.gr/en/greek-news/27125-large-mycenaean-era-engraved-tomb-unearthed-in-orchomenos-south-central-greece.html>

EARTHQUAKE FAULTS MAY HAVE PLAYED KEY ROLE IN SHAPING THE CULTURE OF ANCIENT GREECE

The Ancient Greeks may have built sacred or treasured sites deliberately on land previously affected by earthquake activity, according to a new study by the University of Plymouth.

Professor of Geoscience Communication Iain Stewart MBE, Director of the University's Sustainable Earth Institute, has presented several BBC documentaries about the power of earthquakes in shaping landscapes and communities.

Now he believes fault lines created by seismic activity in the Aegean region may have caused areas to be afforded special cultural status and, as such, led to them becoming sites of much celebrated temples and great cities.

Scientists have previously suggested Delphi, a mountainside complex once home to a legendary oracle, gained its position in Classical Greek society largely as a result of a sacred spring and intoxicating gases which emanated from a fault line caused by an earthquake.

But Professor Stewart believes Delphi may not be alone in this regard, and that other cities including Mycenae, Ephesus, Cnidus and Hierapolis may have been constructed specifically because of the presence of fault lines.

Professor Stewart said: "Earthquake faulting is endemic to the Aegean world, and for more than 30 years, I have been fascinated by the role earthquakes played in shaping its landscape. But I have always thought it more than a coincidence that many important sites are located directly on top of fault lines created by seismic activity. The Ancient Greeks placed great value on hot springs unlocked by earthquakes, but perhaps the building of temples and cities close to these sites was more systematic than has previously been thought."

In the study, published in Proceedings of the Geologists' Association, Professor Stewart says a correspondence of active faults and ancient cities in parts of Greece and western Turkey might not seem unduly surprising given the Aegean region is riddled with seismic faults and littered with ruined settlements.

But, he adds, many seismic fault traces in the region do not simply disrupt the fabric of buildings and streets, but run straight through the heart of the ancient settlements' most sacred structures.

There are prominent examples to support the theory, such as in Delphi itself where a sanctuary was destroyed by an earthquake in 373BC only for its temple to be rebuilt directly on the same fault line.

There are also many tales of individuals who attained oracular status by descending into the underworld, with some commentators arguing that such cave systems or grottoes caused by seismic activity may have formed the backdrop for these stories.

Professor Stewart concludes: "I am not saying that every sacred site in ancient Greece was built on a fault line. But while our association with earthquakes nowadays is that they are all negative, we have always known that in the long run they give more than they take away. The ancient Greeks were incredibly intelligent people and I believe they would have recognised this significance and wanted their citizens to benefit from the properties they created."

Please visit the site: https://www.eurekalert.org/pub_releases/2017-09/uop-efm091217.php

ANCIENT WRITING IN TURKEY DATES BACK TO 2000 BC

Clay tablets dating back 4,000 years show the beginnings of writing and literacy in ancient Anatolia, in the middle of modern-day Turkey, according to researchers.

Excavations at an ancient mound in the central Anatolian province of Kayseri shed light on writing from around 2,000 B.C., said Fikri Kulakoğlu, a professor of archeology at Ankara University and head of the excavation team.

Throughout the 70 years of excavations at Kültepe mound, located 25 kilometers northeast of Kayseri, 23,000 cuneiform-script tablets have been found.

"Excavations have been ongoing in Kültepe for 70 years but Kültepe has been known in the world literature since 1871. The most important reason it is well-known is because these cuneiform tablets were created by the Assyrian and Anatolian traders in Kültepe, especially in Karum. There are nearly 23,000 and most of them are on display at the Museum of Anatolian Civilizations in Ankara. Some 1,000 tablets are in the Istanbul Archaeology Museum and the rest are in the Kayseri Archaeology Museum," he said.

"Anatolian people learned how to read and write in Kültepe. The first-ever literate people in Anatolia are from Kayseri," said Kulakoğlu and added that these were the first written tablets in Anatolia.

Many of the tablets excavated are exercise tablets, apparently used by children to practice their writing.

The reading exercises in scripted tablets are signs of school-like instruction, he said.

Ancient day traders

Alongside the practice tablets are ones used for trade or business, Kulakoğlu said.

The tablets were used to record anything "valuable," he explained.

"These tablets show that local merchants made their presence in Anatolia alongside the Assyrians," a people from a civilization in ancient Mesopotamia, he said.

Kulakoğlu added that the clay tablets excavated from Kültepe are among the rarest in the world.

Kültepe has been a candidate for the UNESCO World Heritage List since 2014.

According to UNESCO's website, the site of Kültepe was the capital of the ancient Kingdom of Kanesh and center of a complex network of Assyrian trade colonies in the 2nd millennium B.C.

Please visit the site: <http://www.hurriyetdailynews.com/ancient-writing-in-turkey-dates-back-to-2000-bc.aspx?PageID=238&NID=117728&NewsCatID=375>

LOST LANGUAGES DISCOVERED IN ONE OF THE WORLD'S OLDEST CONTINUOUSLY RUN LIBRARIES THE CENTURIES-OLD TEXTS WERE ERASED, AND THEN WRITTEN OVER, BY MONKS AT SAINT CATHERINE'S MONASTERY IN EGYPT, BY BRIGIT KATZ

Saint Catherine's Monastery, a sacred Christian site nestled in the shadow of Mount Sinai, is home to one of the world's oldest continuously used libraries. Thousands of manuscripts and books are kept there-some of which contain hidden treasures.

Now, as Jeff Farrell reports for the Independent, a team of researchers is using new technology to uncover texts that were erased and written over by the monks who lived and worked at the monastery. Many of these original texts were written in languages well known to researchers-Latin, Greek, Arabic-but others were inscribed in long-lost languages that are rarely seen in the historical record.

Manuscripts with multiple layers of writing are known as palimpsests, and there are about 130 of them at St. Catherine's Monastery, according to the website of the Early Manuscript Electronic Library, which has been leading the initiative to uncover the original texts. As Richard Gray explains in the Atlantic, with the rise of Islam in the 7th century, Christian sites in the Sinai Desert began to disappear, and Saint Catherine's found itself in relative isolation. Monks turned to reusing older parchments when supplies at the monastery ran scarce.

To uncover the palimpsests' secret texts, researchers photographed thousands of pages multiple times, illuminating each page with different-colored lights. They also photographed the pages with light shining onto them from behind, or from an oblique angle, which helped "highlight tiny bumps and depressions in the surface," Gray writes. They then fed the information into a computer algorithm, which is able to distinguish the more recent texts from the originals.

Since 2011, researchers have photographed 74 palimpsests, which boast 6,800 pages between them. And the team's results have been quite astonishing. Among the newly revealed texts, which date from the 4th to the 12th century, are 108 pages of previously unknown Greek poems and the oldest-known recipe attributed to the Greek physician Hippocrates.

But perhaps the most intriguing finds are the manuscripts written in obscure languages that fell out of use many centuries ago. Two of the erased texts, for instance, were inked in Caucasian Albanian, a language spoken by Christians in what is now Azerbaijan. According to Sarah Laskow of Atlas Obscura, Caucasian Albanian only exists today in a few stone inscriptions. Michael Phelps, director of the Early Manuscripts Electronic Library, tells Gray of the Atlantic that the discovery of Caucasian Albanian writings at

Saint Catherine's library has helped scholars increase their knowledge of the language's vocabulary, giving them words for things like "net" and "fish."

Other hidden texts were written in a defunct dialect known as Christian Palestinian Aramaic, a mix of Syriac and Greek, which was discontinued in the 13th century only to be rediscovered by scholars in the 18th century. "This was an entire community of people who had a literature, art, and spirituality," Phelps tells Gray. "Almost all of that has been lost, yet their cultural DNA exists in our culture today. These palimpsest texts are giving them a voice again and letting us learn about how they contributed to who we are today."

The Sinai Palimpsests Project, as the team's initiative is known, has taken on new urgency in recent years, as the Islamic State's presence in the Sinai Peninsula has made Saint Catherine's monastery even harder to reach. Phelps and his fellow researchers are making images of the palimpsests available online, so scholars can explore the secret writings that have recently been brought to light.

Please visit the site: <http://www.smithsonianmag.com/smart-news/long-lost-languages-found-manuscripts-egyptian-monastery-180964698/>

7,200-YEAR-OLD VESSEL UNEARTHED IN ISRAEL SHOWS RITUALITY OF FOOD STORAGE **ARCHAEOLOGISTS DANNY ROSENBERG AND FLORIAN KLIMSCHA BELIEVE CLAY VESSEL UNEARTHED AT TEL TSAF IN JORDAN VALLEY WAS A MODEL SILO** **DANIEL SIRYOTI AND ISRAEL, BY HAYOM STAFF**

A 7,200-year-old pottery vessel recently unearthed at the prehistoric site of Tel Tsaf in the Jordan Valley is the first evidence of the ritual and political significance of large-scale food storage in the ancient Near East, the University of Haifa reported Wednesday.

Professor Danny Rosenberg of the Zinman Institute of Archaeology heads the research project at Tel Tsaf along with Dr. Florian Klimscha from the German Archaeological Institute in Berlin. The site is notable for its preservation of architecture, organic materials and other types of material culture.

"Until now, discussions of the early transition to complex societies in this area have focused mainly on later periods and on the connection between the development of socioeconomic elites and the ability of certain individuals or families to store large quantities of food, beyond their own needs for survival," Rosenberg explained.

"The findings at Tel Tsaf provide first hand evidence of the early connection between food storage on a large scale and the observance of a ritual associated with the successful storage and preservation of agricultural yields," Rosenberg added.

The unique findings from Tel Tsaf include numerous silos used for large-scale grain storage, evidence of the storage of food on a scale not previously documented at sites from this period.

The researchers noted that the wish and ability to store food was an "important step" in humans' transition to more complex social structures, and pointed out the importance of the site's location by the Jordan River, a major water source.

Rosenberg notes that a trove of pottery vessels uncovered at the site two years ago included what the researchers believe was a model of the grain silo: "This vessel is not 'functional' and was found in a building that was used for intensive storage, on the floor, in a room surrounded by numerous silos similar to those we are familiar with from archaeological and ethnographic records from various parts of the world. ... From later evidence, we know that humans created vessels symbolizing larger storage structures."

"The size and characteristics of this vessel, together with the archaeological context in which it was found, reinforce our assumption that this vessel symbolized the silos and

was probably used in a ritual setting, perhaps as part of the ceremonies that preceded the placement of grains of wheat and barley in the silos, or their removal from storage," the researchers explained.

The connection between the growth of food storage capacity and the human cycle of life and death is well known to researchers from various sources, including later findings from the ancient Near East.

Please visit the site:

http://www.israelhayom.com/site/newsletter_article.php?id=45181

**ARCHAEOLOGISTS RECONSTRUCT HOW
THE ARCH OF TITUS LOOKED - IN FULL
COLOR WHEN BUILT, THE ARCH WAS NOT
A MAJESTIC WHITE STONE TESTIMONY
TO ROME CRUSHING THE JEWS, IT WAS A
BRIGHTLY COLORED MONUMENT
AGGRANDIZING VESPASIAN AND HIS
DYNASTY, BY RUTH SCHUSTER**

The cities of ancient Rome and Greece were adorned with stone statues. We are awed to this day by the perfect lines and intricate carvings and weirdly small male parts, all starkly carved in white marble. But when made thousands of years ago, these pieces looked completely different. They were gaudily painted and according to modern tastes, they looked more like they belonged in a kitschy flea market than the Metropolitan Museum.

Now Professor Steven Fine of Yeshiva University and his team have "colorized" the Arch of Titus in Rome, based on the discovery that the menorah depicted on the panel showing Roman soldiers parading with treasures looted from the Second Temple in Jerusalem had been painted yellow.

It is absurd to think that the triumphant Romans colored only the menorah, especially as we are realizing they painted everything. The whole Arch was probably a blaze of color that would have complied with the aesthetics of the time, but would make westerners today shudder.

"There is a western trope of black and white being signs of purity," Fine tells Haaretz. "That's why we live in a 'white' city. That's why New Yorkers wear black and white (and brown) to work. Most people hate the Roman statues in color. They think it looks like a piñata."

Actually it was museum curators in Germany who first realized that ancient statues had been colored. They were seeing traces of tint on the rocks. "It has become clear only in the last 20 or 30 years that the ancient world was a colorful place," Fine tells Haaretz, during his visit to Israel for an archaeological conference, hosted by the City of David organization and Israel Antiquities Authority, on "Titus in Jerusalem" on Thursday.

Note that the spoils from the Temple taken by Rome some 2,000 years ago have not been found. We do not have the menorah and if anything, there is a fierce argument over what it really looked like. Mostly the menorah is depicted, like in the Arch, as being round-based but some, such as the Chabad Hassidic movement, believe it had a triangular base.

Nor do we know if the original menorah was indeed made of gold. But the yellow color in panel of the arch showing Titus' triumph argues that it was. (Some rabbinic sources

describe the Temple menorah as being multicolored, Fine notes.) Whatever it looked like, the ancient Romans took the menorah and built not one but two arches in Rome to mark the victory over the rebellious Jews of Palestine.

Hoping to gain insight on the real look of the spoils panel, Fine and his team created a three-dimensional scan of it and created a digital restoration. But as for the real thing, merely gazing at marble from which the paint chipped off millennia ago isn't helpful, so Fine tapped the science of metallurgy.

"I was part of the team that found bits of paint on a Caligula statue," he says, referring to the short-lived Roman emperor Gaius Julius Caesar Augustus Germanicus (12-41 C.E.) known for exhausting the Roman treasury with his extravagance and for his foul personal habits.

The Caligula project led Fine to suggest testing the Arch of Titus. The Roman Antiquities Authority gave permission and the archaeologists found traces of yellow paint on the menorah.

That momentous discovery did not win the team the accolades they might have anticipated. "Wouldn't you know, we were immediately attacked for taking away the 'true vision' of ancient Rome," Fine says.

Unable to continue testing the Arch because of various hurdles but uncowed by the howls, they began to imagine what the rest of it had looked like. "Once you have one bit of color on a major monument, you have it all," Fine says, though qualifying that they are not stating that they have nailed the true colors of the panel.

Their reconstruction is theoretical, but is based on common sense and standard Roman iconography, and also the belief that the Romans had a very limited palette. For instance blue was a tough color to synthesize until the 19th century: "They had to use costly lapis lazuli, which decomposes quickly."

Initially they imagined the Roman soldiers shouldering the Temple spoils walking on green grass, but experts on Roman statuary counseled them to use basalt gray. They could surmise that the trumpets had been colored silver (the historian Josephus says as much) and that the background sky was blue, that leaves were green, and so on. "Our colors are really bright because it's the day they were painted. We took the tone from the yellow and did it across the board," Fine says.

Ancient Roman fake news

In their digital reconstruction, Fine and the team "fixed" the heads of the Roman soldiers, but deliberately did not give them individual faces. "We took one head that existed in three dimensions and cloned it. They all have the same face - looks like Star Wars," he laughs. (The other original heads were all two-dimensional.)

The Arch of Titus is positioned on an east-west axis, and as one goes into the arch, the carving gets shallower. On the left, the menorah is a deep-etched relief; on the right, it's shallow, says Fine. If light is raked across the Arch, the figures seem to be moving.

And as said, there are two Arches of Titus commemorating the conquest of Judea. Some might think the Romans were so thrilled at finally vanquishing the troublesome Jewish rebels that they marked it twice. Fine has a different take.

"It wasn't about conquering the Jews. They were part of the empire," he argues. "It was a fake The Judean war, which started under Nero, was Vespasian's claim to authority because he won. But it was just a put-down of a local rebellion in a pesky province, not a foreign war. They played it up to glorify Vespasian and solidify his dynasty and glory."

Take the Colosseum. Vespasian began construction on the gigantic amphitheater in 72 C.E. (apparently), and at least one inscription suggests he used money looted from the Judeans to pay at least some of the bill. Fine thinks the arches and Colosseum were erected as a giant propaganda effort to establish the new Flavian dynasty, led by Vespasian.

Probably the Colosseum was colorful too. The Romans seem to have painted all their statues, though to different extents: sometimes they might paint clothing onto a goddess, or add flourishes to the capital of a column but not to the column itself. Meanwhile color traces have been detected on temple fragments on the Palatine and other Flavian buildings, one a temple just a few hundred meters from the Arch. It had the same yellow paint on it. "We are assuming that they used the same yellow everywhere," says Fine.

The Roman inspiration for the colorization may have come from the ancient Greeks who also had the habit of painting their statues. "The Romans were not creative about these things," sniffs Fine. "I fact when looking at the panel, we see how uncreative they were. We see the same person reproduced twice. Person 13 is same as number 6."

Jews may boast of the modesty of synagogues, compared with the soaring pomp of, say, cathedrals. The ancient Hebrews however seem to have felt otherwise. The walls of the ancient synagogues in the Galilee were probably in painted in gaudy colors too, Fine says. "They didn't look like stark modernist synagogues with Bauhaus architecture, they probably looked ungapatchka," Fine says, a Yiddishism that turns out to mean "a bit much".

Please visit the site: <http://www.haaretz.com/archaeology/1.811165> [Go there for pix]

THE MYSTERY OF THE LOST ROMAN HERB, BY ZARIA GORVETT

Julius Caesar kept a cache of it in the government treasury and the Greeks even put it on their money. It was worth its weight in gold - but no one knows if it still exists.

Long ago, in the ancient city of Cyrene, there was a herb called silphium. It didn't look like much - with stout roots, stumpy leaves and bunches of small yellow flowers - but it oozed with an odiferous sap that was so delicious and useful, the plant was eventually worth its weight in gold.

To list its uses would be an endless task. Its crunchable stalks were roasted, sauteed or boiled and eaten as a vegetable. Its roots were eaten fresh, dipped in vinegar. It was an excellent preservative for lentils and when it was fed to sheep, their flesh became delectably tender.

Perfume was coaxed from its delicate blooms, while its sap was dried and grated liberally over dishes from brains to braised flamingo. Known as "laser", the condiment was as fundamental to Roman haute cuisine as eating your food horizontally in a toga.

Then there were the medical applications. Silphium was a veritable wonder herb, a panacea for all manner of ailments, including growths of the anus (the Roman author Pliny the Elder recommends repeated fumigations with the root) and the bites of feral dogs (simply rub into the affected area, though Pliny warns his readers never, ever to try this with a tooth cavity, after a man who did so threw himself off a house).

Finally, silphium was required in the bedroom, where its juice was drunk as an aphrodisiac or applied "to purge the uterus". It may have been the first genuinely effective birth control; its heart-shaped seeds are thought to be the reason we associate the symbol with romance to this day.

Indeed, the Romans loved it so much, they referenced their darling herb in poems and songs, and wrote it into great works of literature. For centuries, local kings held a monopoly on the plant, which made the city of Cyrene, at modern Shahhat, Libya, the richest in Africa. Before they gave it away to the Romans, the Greek inhabitants even put it on their money. Julius Caesar went so far as to store a cache (1,500lbs or 680kg) in the official treasury.

But today, silphium has vanished - possibly just from the region, possibly from our planet altogether. Pliny wrote that within his lifetime, only a single stalk was discovered. It was plucked and sent to the emperor Nero as a curiosity sometime around 54-68AD.

With just a handful of stylised images and the accounts of ancient naturalists to go on, the true identity of the Romans' favourite herb is a mystery. Some think it was driven to extinction, others that it's still hiding in plain sight as a Mediterranean weed. How did this happen? And could we bring it back?

Legend has it that silphium was first discovered after a "black" rain swept across the east coast of Libya over two and a half millennia ago. From then onwards, the herb spread its broad roots ever further, growing luxuriantly on lush hillsides and forest meadows.

It might sound strange - after all, North Africa is hardly famed for its greenery, but this was Cyrenaica, a land of tiered highlands with an abundant water supply. Today parts are known to receive up to 850mm of rain (34in) per year, which is nearly as wet as Britain.

The region was originally settled by the Greeks and annexed by the Romans in 96BC, followed by Cyrene a couple of decades later. Almost immediately, silphium stocks began to decline at an alarming rate. Within 100 years, it had disappeared altogether.

The thing is, the fussy plant only grew in this region. Its entire range consisted of a narrow strip of land about 125 miles (201km) by 35 miles (40km).

Try as they might, neither the Greeks or the Romans could work out how to farm it in captivity. Instead silphium was collected from the wild, and though there were strict rules about how much could be harvested, there was a thriving black market.

The dried sap was sold on the streets by unscrupulous "laser dealers" for sky-high prices. They'd say pretty much anything to get you to buy their product, including pawning customers off with the notoriously stinky asafoetida. The spice is popular in India and Central Asia today, where it lends its garlicky notes to dahls, meatballs and roasted vegetables. But now, as in classical times, it is known primarily for its powerful sulphurous smell, like a mixture of dung and overcooked cabbage. Its Latin name means "fetid gum".

The Romans considered asafetida a reasonable substitute, but some swaps were harder to swallow. It was regularly adulterated with rubber or ground beans, while other spices such as black pepper were bulked out with cheap mustard from Alexandria or even juniper berries; bitter, astringent, best known as the principal flavor in gin, they're hardly a perfect match, but ".well, they're a similar size," says Erica Rowan, a classical historian from the University of Exeter.

Central to this botanical riddle is the fact that silphium couldn't be farmed. But why?

The herb stumped even the most enthusiastic plant geek of the day, Theophrastus. Widely known as the father of botany, this Greek author was best friends with another giant - Aristotle, the father of biology - and wrote extensively about the characteristics of plants. Though he didn't understand why it couldn't be cultivated either, he observed that they tended to grow best on land which had been dug up the previous year.

There are several possible reasons for this. "Often the issue is the seeds," says Monique Simmonds, deputy director of science at Kew Gardens, London.

Take poppies. A single plant can produce up to 60,000 seeds, which means that, assuming 90,000 plants, a single field may contain around 5.4 billion. But they must be exposed to light to grow. Without it, they'll just sit there until they're eaten or begin to rot. For this reason, poppies thrive on disturbed land where light can creep into gaps in the soil, such as the battlefields of World War One.

But there are other explanations - and perhaps the best place to look for clues is a plant that has eluded farmers to this day.

Every year, hundreds of thousands of people descend on America's National Parks, from the Pacific Northwest to the mountains of Montana and Idaho. Instead of hiking gear, they're armed with baskets, pots and pans, ready to brave grizzly bears and territorial gunfights in pursuit of one of the most coveted fruits on the planet: the huckleberry. The tart red berries are added to jams, sauces, pies, ice creams, snow cones, daiquiris, and even curries - and every year, demand exceeds supply. But there isn't a single commercial huckleberry farm on the continent.

After early colonial settlers failed to bring the berry to Europe, serious efforts to cultivate the plant began in 1906. More than a century later, the stubborn shrub still hasn't yielded to captivity. When they're grown from seed, they are mysteriously devoid of fruit.

The huckleberry is native to the mountain slopes, forests and lake basins of North America. The plant has wide, sprawling roots topped by a bush which grows out of an underground stem.

Lacking a dense, centralised root system makes them especially difficult to replant. Early huckleberry farmers made an easy mistake, digging up their long underground stems instead of the roots. Replanting them would be like trying to grow a pile of leaves.

But now that they've defied the best efforts of modern botany, it looks like there really is no secret trick to growing them. Instead the answer is thought to lie in their natural habitat. "The plants growing in an area can have a big impact on its soil chemistry," says Simmonds. Farming inevitably alters the balance of elements such as magnesium in the soil, so some plants will never grow well on cultivated land. As of 2017, the only way to grow more huckleberries is to clear some woodland and leave them well alone.

According to Kenneth Parejko, emeritus professor of biology at the University of Wisconsin-Stout who has studied the silphium enigma, wildflowers are particularly sensitive to this. "Here in the northern US there are many growing in the prairies, but if you try to take them to plant in your garden - as I have - they don't survive at all." On some level, the ancient Greeks may have known this. After attempting to grow silphium in Europe, they wondered if their land might be missing a "humour" necessary to nourish it.

But there is another possibility: silphium was a hybrid. Crossing two separate species can have delicious or handy results. When you mix a male camel with a female llama, their cama babies have all the wool-producing talents of their mother and the size and strength of their father. It's the same story for garden strawberries, which are a cross between North American and Chilean varieties; they're bigger and juicier than either of their parents. Meanwhile, the oddly-named Toast of Botswana, a one-of-a-kind hybrid of a male goat and female sheep, was an exceptionally fast grower and extraordinarily resilient to disease (it was also unexpectedly lustful, and had to be castrated).

The trick is well known today. One of the most widespread hybrids is corn, which is produced to the tune of around 14 billion bushels (360 million metric tonnes) every year. But while the first generation produced by such unions can be highly desirable, their

offspring usually aren't in the same league. Second-generation hybrids are extremely unpredictable, as the dominant genes from either parent begin to take over and tip the balance of their features. In the end, you might end up with an animal with the temperament of a llama and the wool-making abilities of a camel.

In wild plants, this isn't a problem. In fact, the hybridisation only needs to happen once - from then on, the plants don't grow from seed, but asexually, by spreading their roots. This is the case with the cemetery iris, *Iris albicans*, which produces fragrant white flowers traditionally planted on graves in Muslim regions. It has double the usual number of chromosomes and is completely sterile - yet it has been going strong since its parents met in the Middle Eastern desert thousands of years ago.

If silphium were a mongrel, when the Greeks tried to grow some from seed the result could have been barely recognisable.

Intriguingly, this fits with ancient reports of silphium from Media (northwest Iran), Syria and Parthia (northeast Iran), which was much less valuable than the stuff from Cyrene. Given the liberal substitutions in ancient markets, it's possible that these products weren't silphium at all - but maybe, just maybe, they were the weedy descendants of a hybrid.

Either way, the ancient lust for true silphium proved too much. Pliny the Elder wrote that Roman landlords had been forced to fence off the herb's meadow habitat to stop local sheep from devouring the whole lot. "They might have grazed it right down to the roots and killed it," says Parejko.

Eventually the locals rebelled, tearing the fences down to increase the value of their flock; silphium-fed sheep were the ancient equivalent of Wagyu beef. Amid rising tensions, sometimes they'd break in just to sabotage them.

The herb was being attacked from all sides - overharvested and overgrazed. And throughout it all, it may also have been undermined by its own biology. The Greeks had strict rules about how much of the root could be harvested at one time, which suggests that if enough was left in the ground, it would bounce back. But inevitably the economics of supply and demand kicked in. As the plant's value increased, unscrupulous smugglers may have taken the whole lot. "If you're going to take the roots, you really need a plant that grows well from seed," says Simmonds.

The story of silphium's decline is depressingly familiar today. Medicinal herbs are a multi-billion-dollar industry and growing. Many are under threat from climate change and development - and to add insult to injury, the vast majority are collected from the wild. In South Africa alone, 82 medicinal herbs are threatened with extinction and two have already vanished.

Meanwhile the bluefin tuna, which swims in the waters off the coast of Libya has still, after decades of trying, never been raised successfully from egg to adult. Like silphium, the latter is becoming ever more profitable as it edges closer to extinction. In early 2017, a single fish was auctioned for £517,000 (US \$668,000).

But there is a glimmer of hope. There have only been a handful of studies on the plant diversity in Libya - if even a few plants escaped the clutches of the Romans, it may still be found. "It could absolutely still be there. It's not an easy country to survey," says Simmonds.

Of course, this is made slightly trickier by the fact that no one knows what they're looking for. "We tend to find the seeds of other plants, such as coriander and dill, at ancient sites. But no one has ever found silphium," says Rowan.

Theophrastus described the plants as having thick roots covered in black bark. They were extravagantly long; if you were to hold one up against the human body, it would be around the distance from the elbow to the tip of the middle finger (an ancient unit of measurement known as a cubit). Though the plant was "most peculiar", he said it had a hollow stalk a bit like fennel and golden leaves which resembled those of celery.

The ancient coins which bear its image show a plant with flowers arranged in what botanists call a "large apical umbel", which Parejko describes as a disc like the end of a watering can. "It would have looked quite conspicuous," says Simmonds.

Theophrastus compared it to another herb, *Magydaris pastinacea*, which grew in Syria and on the slopes of Mount Parnassus near the Greek city of Delphi. He believed both were "spineless under shrubs" related to fennel.

He may have been onto something. Scientists now think that, like *asafoetida*, silphium may have belonged to a group of fennel-like plants, the *Ferula*. They are actually related to carrots and grow wild as weeds across North Africa and the Mediterranean. Incredibly, two of these plants - giant Tangier fennel and giant fennel - still exist in Libya today. It's possible that one of these is silphium.

So could silphium make a comeback? According to Rowan, even if the herb isn't extinct, it probably wouldn't be to modern tastes - in the Western world at least. "There's a whole bunch of seasonings that the Romans used to use, like lovage, that today most people haven't even heard of," says Rowan. Back in the day, lovage was a staple of the Roman dinner table. Today it's virtually impossible to buy, consigned to niche online shops and obscure corners of garden centres.

In fact, Roman cuisine wasn't at all like Italian food. It was all about contrasting sweet with salty and sour foods (they liked to eat fishgut sauce, *garum*, with melon). Instead Rowan compares it to modern Chinese food. "If it was edible, they were eating it - nothing was off the table," she says.

If you'd like to see for yourself, why not try this Roman recipe for braised flamingo and parrot, substituting *asafoetida* for laser.

"Scald the flamingo, wash and dress it, put it in a pot, add water, salt, dill, and a little vinegar, to be parboiled. Finish cooking with a bunch of leeks and coriander, and add some reduced must [condensed grape mush] to give it color. In the mortar crush pepper, cumin, coriander, laser root, mint, rue, moisten with vinegar, add dates, and the fond [drippings] of the braised bird, thicken, strain, cover the bird with the sauce and serve. Parrot is prepared in the same manner. "Apicus 6.231

We may never learn the true identity of silphium, but we can learn from its decline. The last survey of Cyrene showed that many species are rapidly disappearing, as land is given

over to deserts and once again, it's overgrazed. The Roman Empire may be long gone - but it seems we're repeating the same mistakes.

Please visit the site: <http://www.bbc.com/future/story/20170907-the-mystery-of-the-lost-roman-herb>

THE COLOR PURPLE: MYSTERY OF WHAT HAS BEEN KILLING ANCIENT PARCHMENTS SOLVED

Hoping to help save ancient documents, including at the Vatican, scientists discover what has been eating parchments going back millennia.

Ruth Schuster

Ancient parchments are rare, precious and delicate, and it turns out they require protection not only from antiquities looters but from turning purple, then falling apart.

Any ancient document found by archaeologists was preserved because it had been somehow protected from the elements, or because the environment was conducive to preservation, such as deep desert. The Dead Sea Scrolls found in the Judean Desert are a good example.

Once unearthed and exposed, parchments tend to deteriorate fast - and some begin to develop mysterious light purple spots. One result of the empurplement is that the parchment layers separate, often destroying the inked text.

Using a 13th-century empurpled scroll, genetic analysis and microbiological detective work, scientists at Tor Vergata University, Rome have now figured out how these blemishes are caused, as described in *Nature*, *Scientific Reports* on Thursday.

In a discovery that may help preserve or restore fragile ancient documents, scientists found the spots are caused by not one, but a succession of bacteria that eat at the collagen fibers that are crucial to the parchment's integrity.

From homicide to hermit cave

Parchment is made of untanned skin, usually of sheep or goats. biologist Prof. Luciana Migliore and her team worked on a five-meter long scroll written in 1244 C.E.

The document tells the story of a soldier, Laurentius Loricatus, who accidentally killed a man. Horrified by his deed, he laid down his arms and made a pilgrimage of penance to Santiago de Compostela, Spain. He then sequestered himself in the ruins of a monastery near Subiaco, Italy, for the next 34 years.

Though falling short of sainthood despite tormenting himself by wearing chain mail on his bare skin - which is actually what his surname means in Italian, he is today known as Laurentius Loricatus the Blessed. According to the record of Catholic Saints, he died in 1243. The scroll was written the following year, for a Vatican canonization inquiry, they explain.

Canonization can take time. Laurentius was beatified in over five centuries later, in 1778.

Meanwhile, the purple spots that the text describing Loricatus' travails and humility had developed are a peculiarity of parchment. Though, as Migliore points out to Haaretz, bacteria can destroy plant-based documents as well. "Usually paper documents are more heavily damaged by fungi," she observes.

She suspects the Loricatus parchment was damaged before the scroll was stored at the Vatican Secret Archive, in the late 18th century.

By sampling the spots, and parchment bits that didn't have spots, and performing genetic analysis of the microbial communities colonizing the scroll, Migliore and the team discovered a type of gammaproteobacteria: they were present in the purple spots but absent in the undamaged areas of the parchment, the article explains.

The rub is that the gammas were not responsible for the purple stains.

What our eyes have in common with bacteria

The scientists concluded that such stains on ancient parchments are caused by a microbial succession, the gammas replaced a different germ, a halobacteria - which is the one that caused the purple spots, by producing chemicals called rhodopsins.

Rhodopsins may sound familiar: also known as visual purple, it's a pink-colored protein that we have in our eyes that is involved in converting the light that hits our retinas into electrical signals. In bacteria, they are involved in light-driven metabolism. Halobacteria produce pinkish-colored proteins called rhodopsins, gammaproteobacteria do not.

In any case, first the ancient parchments are colonized by halobacteria that produce rhodopsins and stain the parchment. Later these are supplanted by the gammaproteobacteria that the scientists found. "Ecological succession is a common feature of all natural communities," Migliore says.

Naturally there could be more germs in this sequence, as there are millions of species of bacteria and some produce rhodopsins: broader research is needed. In any case, there is no lack of ancient parchments affected by the malady. "A lot of ancient documents all over the world show this kind of damage," Migliore says.

"The microbial succession we hypothesized on the base of metagenomic, chemical and physical analyses support the idea that halobacteria are the responsible [party]. Research work is ongoing, to demonstrate the model on different documents of different historical periods," Migliore elaborates. That said: "The type of damage on this document is the same as in the great majority of the damaged ancient parchments. Hence we suppose that the dynamics of the attack are always the same."

Having identified the responsible bacteria, how can parchments be better protected against them?

"We hope that the model of microbial colonization we hypothesized will open new perspectives to the conservation and restoration of ancient parchments, because we could work not only on microbes but also on the pigments and on collagen deterioration," Migliore says.

Please visit the site: <http://www.haaretz.com/archaeology/1.811076>

8,000-YEAR-OLD PAINT WORKSHOP DISCOVERED IN TURKEY'S ESKİŞEHİR

One of the oldest paint workshops of the world have been found at an ancient settlement in northwestern Turkish province of Eskişehir, Anadolu Agency reported Thursday.

Archaeologists working at the ancient settlement mound of Kanlıtaş discovered traces of paint from 6,000 B.C. at a workshop.

Located north of central Eskişehir, the settlement lies on the northern slope of a hill in the middle of a valley.

Considered to be the oldest settlement of Central-West Anatolian region, the mound was a permanent settlement encircled with large retaining walls to the east and the west.

8,000-year-old paint workshop discovered in Turkey's Eskişehir

Anadolu University Archaeology Professor Ali Umut Türkcan told the Anadolu Agency that the large walls provided protection for the ancient people.

He noted that their research concluded that the mound was used as a production center and a workshop.

"Since the beginning of excavations we wondered if a paint workshop existed here. We discovered samples of paint in mortars, ground stones and a container" Türkcan said.

8,000-year-old paint workshop discovered in Turkey's Eskişehir

The researchers will not analyze the source of the paint to determine whether or not they were from organic or mineral sources.

Türkcan also noted that they think the paint could be red ochre, which is produced from mineral sources.

Research at Kanlıtaş Settlement Mound started in 1989 after Eskişehir Archaeology Museum's discovery. Türkcan and his team have been working at the site since 2008.

They have discovered two mounds, Paleolithic workshops and three necropolis sites.

Please visit the site: <https://www.dailysabah.com/history/2017/08/31/8000-year-old-paint-workshop-discovered-in-turkeys-eskisehir>

ANCIENT CITY IN LASITHI, CRETE SHEDS LIGHT ON DEMISE OF MINOAN CIVILIZATION

The University Catholique de Louvain from Belgium continued its excavations in the monumental building with a central courtyard on Kefalari Sissi (Lasithi, Crete), dating back to the 16th century. B.C. The research was carried out under the auspices of the Lasithi Ephorate of Antiquities and the Athens Belgian School with the assistance of experts and students from Greek and international universities....

The Belgian School of Athens issued a statement stressing that “the entire complex dates back to the neo-palatial period of the Minoan civilisation, around the 16th century. B.C. and was abandoned around the time of the eruption in Santorini, ashes of which were discovered inside the building. Beginning in 2015, it was finally possible to clean the central courtyard covered with mortar, which appears to have a maximum size of 16.50 x 33m.”

It should also be underlined that “several ceremonial installations were located above and along this central courtyard, which was directly accessible to the southwest by means of an elaborately covered aisle with corrugated walls”. The excavation revealed other large parts from the east and west wing of the complex, which also include a circular water collection cavity, which is connected to a water source.

Please visit the site: <http://www.tornosnews.gr/en/greek-news/culture/27295-ancient-city-in-lasithi-crete-sheds-light-on-destruction-of-minoan-civilization.html>
