



Επιστημονικό Σωματείο,
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Πληροφοριακό Δελτίο της Ελληνικής Αρχαιομετρικής Εταιρείας

- Δεκέμβριος 2022 -

**Love of power, operating through greed and
through personal ambition, was the cause of all
these evils.**
(Thucydides)

Newsletter of the Hellenic Society of Archaeometry

- December 2022 -

Nr. 261

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ΣΥΝΕΔΡΙΑ - CONFERENCES/WORKSHOPS

ΔΙΕΘΝΕΣ ΔΙΑΔΙΚΤΥΑΚΟ FORUM, ΜΕ ΤΙΤΛΟ «Ο ΕΛΛΗΝΙΚΟΣ ΠΟΛΙΤΙΣΜΟΣ ΣΤΟΝ ΨΗΦΙΑΚΟ ΔΗΜΟΣΙΟ ΧΩΡΟ ΚΑΙ ΤΗΝ ΕΥΡΟΠΕΑΝΑ-ΠΡΟΚΛΗΣΕΙΣ – ΠΡΟΟΠΤΙΚΕΣ», 1-2 ΔΕΚΕΜΒΡΙΟΥ 2022

Το Εθνικό Κέντρο Τεκμηρίωσης και Ηλεκτρονικού Περιεχομένου (ΕΚΤ) και ο Δευτεροβάθμιος Μη Κερδοσκοπικός Οργανισμός «Δίκτυο ΠΕΡΡΑΙΒΙΑ», σε συνδιοργάνωση με το Πανεπιστήμιο Δυτικής Αττικής, την έδρα UNESCO του Τεχνολογικού Πανεπιστημίου Κύπρου και το Ευρωπαϊκό Ινστιτούτο Πολιτισμού, Περιβάλλοντος και Επιστημών, σας προσκαλούν σε ένα διήμερο διεθνές διαδικτυακό Forum, με τίτλο «Ο Ελληνικός Πολιτισμός στον Ψηφιακό Δημόσιο Χώρο και την Europeana-Προκλήσεις – Προοπτικές». Το Forum θα πραγματοποιηθεί διαδικτυακά στις 1 και 2 Δεκεμβρίου 2022 και τελεί υπό την Αιγίδα του Υπουργείου Πολιτισμού και Αθλητισμού.

Το [SearchCulture.gr](https://www.searchculture.gr) είναι ο Εθνικός Συσσωρευτής Ψηφιακού Πολιτιστικού Περιεχομένου που αναπτύσσει το ΕΚΤ. Στο [SearchCulture.gr](https://www.searchculture.gr) έχουν συγκεντρωθεί μέχρι σήμερα πάνω από 830.000 τεκμήρια, όπως αρχεία, χάρτες, λαογραφικό υλικό, βιβλία, μνημεία, κλπ., από 78 φορείς από όλη την Ελλάδα, όπως η Διεύθυνση των Κινητών Μνημείων του Υπουργείου Πολιτισμού, το Ελληνικό Λογοτεχνικό και Ιστορικό Αρχείο, η Εθνική Πινακοθήκη, το Φεστιβάλ Θεσσαλονίκης, το Ίδρυμα Ερευνών και Μελετών Ελευθέριος Βενιζέλος στα Χανιά, κλπ. Όραμά μας είναι το [SearchCulture.gr](https://www.searchculture.gr) να προσφέρει ένα ενιαίο σημείο πρόσβασης στο σύνολο της ψηφιακής πολιτιστικής κληρονομιάς και της νεότερης και σύγχρονης πολιτιστικής δημιουργίας που φιλοξενείται στα επιμέρους ψηφιακά αποθετήρια των πολιτιστικών φορέων, και να το καταστήσει ανοικτό, επαναχρησιμοποιήσιμο και μακροχρόνια διαθέσιμο για επιμέρους κοινότητες ενδιαφέροντος, όπως την εκπαιδευτική και την ερευνητική κοινότητα αλλά και το ευρύ κοινό, με σκοπό τη μάθηση, τη δημιουργικότητα, την έμπνευση και την καινοτομία, συμβάλλοντας έτσι στη δημιουργία ενός Ψηφιακού Δημόσιου Χώρου για τον Πολιτισμό.

Παράλληλα, το ΕΚΤ είναι και ο διαπιστευμένος Εθνικός Συσσωρευτής για το Ψηφιακό Πολιτιστικό Περιεχόμενο στην ευρωπαϊκή πλατφόρμα [Europeana](https://www.europeana.eu), στην οποία έχει διαθέσει πάνω από 580.000 τεκμήρια. Τα στελέχη του ΕΚΤ συμμετέχουν στο Φόρουμ των θεματικών και εθνικών συσσωρευτών της Europeana, σε ευρωπαϊκά έργα που συντονίζονται από τη Europeana (Europeana Common Culture, CRAFTED, κλπ.) καθώς και σε ομάδες εργασίας μέσα από τις οποίες συνδιαμορφώνουν τις ευρωπαϊκές εξελίξεις γύρω από τον Ψηφιακό Πολιτισμό. Παρόλα αυτά, το ελληνικό περιεχόμενο που μπορεί κανείς να βρει σήμερα στη Europeana αντιστοιχεί μόνο στο 1,17% του συνολικού περιεχομένου.

Η υποχρέωση ένταξης των παραγόμενων ψηφιακών συλλογών στο [SearchCulture.gr](https://www.searchculture.gr) και, μέσω αυτού και στη Europeana, έχει αρχίσει να εντάσσεται ως υποχρέωση στις νέες

προσκλήσεις χρηματοδότησης έργων ψηφιοποίησης του πολιτιστικού αποθέματος στη χώρα μας, όπως στην Πρόσκληση 03_ΕΠΑΝΕΚ της ΕΥ ΨΗΜΕΤ και στην 118 της ΕΥΔ ΕΠΑνΕΚ. Ως εκ τούτου, το επόμενο διάστημα αναμένεται μία σημαντική κλιμάκωση της διάθεσης του ψηφιακού μας αποθέματος στο διαδίκτυο. Το σύνολο των παραγόμενων αποτελεσμάτων θα συμμορφώνεται με τις Βασικές Προδιαγραφές Διαλειτουργικότητας που έχει εκδώσει το ΕΚΤ, και οι οποίες συνιστούν ουσιαστικά, μία κοινή γλώσσα να μιλάμε για βασικά θέματα ψηφιοποίησης και πρότυπης διάθεσης του πολιτισμού στο διαδίκτυο, σε εθνικό επίπεδο. Παράλληλα, η πρόσφατη ευρωπαϊκή Σύσταση του 2021 για τη δημιουργία ενός Ψηφιακού Δημόσιου Χώρου για τον Πολιτισμό καλεί τα Κράτη-Μέλη να επιταχύνουν τον ψηφιακό μετασχηματισμό του πολιτιστικού τομέα, λαμβάνοντας τις απαραίτητες ενέργειες για τον σχεδιασμό μίας ολοκληρωμένης στρατηγικής σε εθνικό επίπεδο η οποία θα συμβάλει στη δημιουργία ενός Ευρωπαϊκού Χώρου Δεδομένων στον Πολιτισμό.

Σε αυτό το πλαίσιο, στόχος του Forum είναι να αποτιμηθεί η έως τώρα πορεία της συμμετοχής της χώρας μας στη Europeana, την Ευρωπαϊκή Πλατφόρμα για τον Πολιτισμό, αλλά και να διερευνηθούν περαιτέρω οι προοπτικές και οι προκλήσεις που εγείρονται από τον ψηφιακό μετασχηματισμό του πολιτιστικού τομέα, όπως η βιωσιμότητα των χρηματοδοτούμενων υποδομών και η κατάρτιση των στελεχών των φορέων πολιτισμού ως προς τις ψηφιακές τους δεξιότητες. Παράλληλα, θα αναδειχθούν οι σχέσεις του ψηφιακού πολιτισμού με κείριους τομείς όπως η εκπαίδευση, η έρευνα, ο τουρισμός και η πολιτιστική διπλωματία. Τη δεύτερη ημέρα του Φόρουμ, θα διενεργηθεί πρακτικό σεμινάριο για την ένταξη νέων συλλογών στο SearchCulture.gr και τη Europeana.

Η συμμετοχή στο Forum είναι ανοικτή στο κοινό, αλλά απευθύνεται κυρίως σε φορείς της κεντρικής κυβέρνησης και της τοπικής αυτοδιοίκησης, σε επιστήμονες και ερευνητές που ασχολούνται με οποιαδήποτε πτυχή της συντήρησης και ανάδειξης της πολιτιστικής μας κληρονομιάς, καθώς και σε εταιρείες πληροφορικής και τεχνικούς αναδόχους που υποστηρίζουν έργα ψηφιοποίησης του πολιτιστικού μας αποθέματος και ενδιαφέρονται να ενημερωθούν για τις προδιαγραφές και τον τρόπο διάθεσης των συλλογών στον SearchCulture.gr και την ευρωπαϊκή πλατφόρμα Europeana.

Το Forum θα πραγματοποιηθεί μέσω της πλατφόρμας zoom, στην ελληνική γλώσσα, ενώ θα περιλαμβάνει και ομιλίες στελεχών της Europeana στην αγγλική γλώσσα (χωρίς ταυτόχρονη μετάφραση).

Η συμμετοχή είναι δωρεάν αλλά απαιτείται προεγγραφή:
https://us06web.zoom.us/webinar/register/WN_8fxKB4bkSl2RqYHx_wuvbQ#/registration.

Συνοπτικό Πρόγραμμα

Πέμπτη 1 Δεκεμβρίου 2022:

1. Θα παρουσιαστεί από υψηλόβαθμα στελέχη της Europeana, το έργο που επιτελεί η Ψηφιακή Βιβλιοθήκη της Ευρώπης στην ανάδειξη του πολιτιστικού αποθέματος των ευρωπαϊκών λαών και τη σημασία ενίσχυσης της εθνικής μας παρουσίας σε αυτή.
2. Θα παρουσιαστεί από στελέχη του ΕΚΤ το ιστορικό ανάπτυξης του Εθνικού Συσσωρευτή SearchCulture.gr, οι έως τώρα επιτυχίες και οι μελλοντικές προκλήσεις.

3. Θα παρουσιαστεί τα ζητήματα και οι προοπτικές που εγείρονται γύρω από την σχέση του Ψηφιακού Πολιτισμού μεσημαντικούς τομείς της δημόσιας ζωής και συγκεκριμένα στο χώρο της Έρευνας, της Εκπαίδευσης, του Τουρισμού και της Πολιτιστικής Διπλωματίας.
4. Θα μιλήσουν εκπρόσωποι φορέων με μακροχρόνια εμπειρία στην ψηφιοποίηση και διαχείριση ψηφιακών συλλογών για τη συμμετοχή τους στο SearchCulture.gr και την Europeana.
5. Στο τέλος, στο πλαίσιο Στρογγυλής Τράπεζας θα κατατεθούν απόψεις από τους εκπροσώπους των Φορέων του Δημόσιου χώρου και θα καταγραφεί το μέλλον του Ψηφιακού μας Πολιτισμού.

Παρασκευή, 2 Δεκεμβρίου 2022

Πρακτικό Σεμινάριο για την ένταξη νέων συλλογών

Κύριο αντικείμενο του σεμιναρίου είναι οι "Βασικές Προδιαγραφές Διαλειτουργικότητας για την ένταξη συλλογών στον Εθνικό Συσσωρευτή Search Culture.gr" που έχει εκδώσει το ΕΚΤ για την ένταξη ψηφιακών συλλογών στον Εθνικό Συσσωρευτή Ψηφιακού Πολιτιστικού Περιεχομένου Search Culture.gr ,για έργα τα οποία χρηματοδοτούνται ή όχι από Προσκήσεις του ΕΣΠΑ.

Συγκεκριμένα:

1. Αρχικά θα παρουσιαστεί η διαδικασία που έχει σχεδιαστεί και υλοποιηθεί στο SearchCulture.gr για τον εμπλουτισμό των ψηφιακών συλλογών της ελληνικής πολιτιστικής κληρονομιάς.

2. Στη συνέχεια θα παρουσιαστούν οι βασικές προδιαγραφές διαλειτουργικότητας και συγκεκριμένα: το διαδικτυακό περιβάλλον διάθεσης ψηφιακών συλλογών, τα βασικά μεταδεδομένα, η διάθεσή τους στα υποστηριζόμενα σχήματα μέσω του πρωτοκόλλου OAI-PMH, οι άδειες χρήσης και, τέλος, ως προτα τα ψηφιακά αρχεία, οι προδιαγραφές μορφοτύπων καθώς και οι ελάχιστες αναλύσεις.

3. Τέλος, θα παρουσιαστούν τα λεξιλόγια που έχει αναπτύξει το ΕΚΤ (τύποι αντικειμένων, θέματα, προσωπικότητες, ιστορικές περίοδοι) και έχει δημοσιεύσει ως Ανοικτά Δεδομένα και οι τρόποι με τους οποίους οι φορείς μπορούν να τα αξιοποιήσουν στις υποδομές τους με στόχο την εξασφάλιση της σημασιολογικής διαλειτουργικότητας των συλλογών τους.

Δεν θα δοθούν βεβαιώσεις συμμετοχής για τη συγκεκριμένη εκδήλωση.

Για περισσότερες πληροφορίες, οι ενδιαφερόμενοι μπορούν να επικοινωνούν με το ΕΚΤ στη διεύθυνση www.searchculture@ekt.gr, και με το Δίκτυο ΠΕΡΡΑΙΒΙΑ (αρμόδιος κ. Κων/νος Σκριάπας Τηλέφ. 6974-881944 E-mail: perreianet@gmail.com).

Με Εκτίμηση

ΕΚ ΜΕΡΟΥΣ ΤΩΝ ΔΙΟΡΓΑΝΩΤΩΝ ΦΟΡΕΩΝ
ΕΘΝΙΚΟ ΚΕΝΤΡΟ ΤΕΚΜΗΡΙΩΣΗΣ ΚΑΙ ΨΗΦΙΑΚΟΥ ΠΕΡΙΕΧΟΜΕΝΟΥ
ΠΑΝΕΠΙΣΤΗΜΙΟ ΔΥΤΙΚΗΣ ΑΤΤΙΚΗΣ
ΤΕΧΝΟΛΟΓΙΚΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΚΥΠΡΟΥ
ΔΙΚΤΥΟ "ΠΕΡΡΑΙΒΙΑ"
ΕΥΡΩΠΑΪΚΟ ΙΝΣΤΙΤΟΥΤΟ ΠΟΛΙΤΙΣΜΟΥ, ΠΕΡΙΒΑΛΛΟΝΤΟΣ ΚΑΙ ΕΠΙΣΤΗΜΩΝ

**25TH INTERNATIONAL RADIOCARBON
CONFERENCE, AGH UNIVERSITY OF
SCIENCE AND TECHNOLOGY, KRAKOW,
POLAND, 30 JUNE–5 JULY, 2025**

The 25th International Radiocarbon Conference will be hosted by AGH University of Science and Technology in Krakow, Poland.

The proposed date for the conference is 30 June–5 July 2025.

Conference contact: Prof. dr hab. inż. Marek Krapiec

Website: <https://radiocarbon25.agh.edu.pl/>

Email address: radiocarbon25@agh.edu.pl

Twitter: https://twitter.com/@radiocarbon_25

**Η ΑΘΗΝΑ ΚΑΙ Η ΑΤΤΙΚΗ ΚΑΤΑ ΤΗΝ
ΠΡΩΙΜΗ ΕΠΟΧΗ ΤΟΥ ΣΙΔΗΡΟΥ ΚΑΙ ΤΗΝ
ΑΡΧΑΪΚΗ ΠΕΡΙΟΔΟ, ΔΙΕΘΝΕΣ ΣΥΝΕΔΡΙΟ,
ΑΘΗΝΑ, 8–11 ΔΕΚΕΜΒΡΙΟΥ 2022**
**ATHENS AND ATTICA IN THE EARLY IRON
AGE AND THE ARCHAIC PERIOD,
INTERNATIONAL CONFERENCE, ATHENS,
8–11 DECEMBER, 2022**

Χώροι Διεξαγωγής / Venues

Cotsen Hall, Αμερικανική Σχολή Κλασικών Σπουδών Αθηνών, Αναπήρων Πολέμου 9, 106 76, Αθήνα

Cotsen Hall, American School of Classical Studies, Anapiron Polemou 9, 106 76, Athens &

Μουσείο Παύλου και Αλεξάνδρας Κανελλοπούλου (Παρουσίαση Poster), Θεωρίας 12, 105 55, Αθήνα

Paul and Alexandra Canellopoulos Museum (Poster session), 12, Theorias St., 105 55, Athens

PROGRAM / ΠΡΟΓΡΑΜΜΑ

ΠΕΜΠΤΗ 8 ΔΕΚΕΜΒΡΙΟΥ / THURSDAY DECEMBER 8

09.00–09.30 Εγγραφή / Registration

09.30–10.00 Χαιρετισμοί & Εισαγωγή / Welcome & Introduction

**ΤΟΠΟΓΡΑΦΙΑ, ΟΙΚΙΣΜΟΙ ΚΑΙ ΜΙΚΡΟΠΕΡΙΟΧΕΣ
TOPOGRAPHY, SETTLEMENTS, AND MICROREGIONS**

10.00–10.15 Πολυχρονάκου–Σγουρίτσα Νάγια

Υπομυκηναϊκή Αττική. Μια επαναπροσέγγιση

10.15–10.30 **Knodell Alex, Fachard Sylvian**

Attic land routes and settlement patterns from the Early Iron Age to the Archaic period

10.30–10.45 **Kroustalis Evangelos, Tsaravopoulos Aris**

Protogeometric finds by the Kephisos River as evidence for an early episode in the “internal colonization” of Attica

10.45–11.00 **Χρυσουλάκη Στέλλα, Μαζαράκος Θωμάς, Παπιάς Ιωάννης**

Οι χείμαρροι της άνοιξης. Μία νέα θέση της Ύστερης Γεωμετρικής περιόδου από την περιοχή του Μοσχάτου

11.00–11.10 Συζήτηση / Discussion

11.10–11.30 Διάλειμμα / Coffee break

11.30–11.45 **Παλαιολόγος Δημήτρης**

Η τοπογραφία κατά τους πρώιμους ιστορικούς χρόνους στην ευρύτερη περιοχή του δήμου Διονύσου

11.45–12.00 **Ψαρρή Στέλλα**

Ενδείξεις κατοίκησης, λατρείας, ταφικών θέσεων και οικονομικής οργάνωσης κατά την Γεωμετρική και Αρχαϊκή περίοδο στον αρχαίο δήμο της Αιξωνής

12.00–12.15 **Alexandridou Alexandra, Andreou Amygdalia, Chryssoulaki Stella, Mazarakis Ainian Alexandros**

“He who inherits a hill must climb it”. Returning to the hill of Lathouriza at Vari

12.15–12.30 **Ανδρέου Αμυγδαλιά, Σιμέλη Ειρήνη**

Η πεδιάδα της Βάρης από τον 8ο έως τον 6ο αι. π.Χ.

12.30–12.45 **Πέτρου Κατερίνα, Ραυτοπούλου Στέλλα**

Μεταξύ Προσπάλτων και Θορών: η Βαλομάνδρα κατά τη Γεωμετρική και Αρχαϊκή εποχή

12.45 –13.05 *Συζήτηση / Discussion*

13.05–15.00 *Διάλειμμα / Break*

15.00–15.15 **Murray Sarah, Godsay Melanie, Erny Grace**

The Early Iron Age and Archaic Period around Porto Rafti Bay: insights from recent surface survey data

15.15–15.30 **Στεφανοπούλου Μαρία**

Νεότερες αρχαιολογικές μαρτυρίες για τη Γεωμετρική και Αρχαϊκή περίοδο στην Κηφισιά

15.30–15.45 **Charalambidou Xenia, Andriku Eleni, Dakouri–Hild Anastasia, Davis Steve, Chidiroglou Maria**

Adding Aphidna/Kotroni to the archaeological map of Early Iron Age and Archaic–Classical Attica through the KASP interdisciplinary project

15.45–16.00 **Παπαδημητρίου–Γραμμένου Άννα, Γεωργίου–Γκέκα Περσεφόνη, Πετρίδης Πλάτων, Καλλιγά Κυριακή, Καρακίτσου Έλενα**

Η ανασκαφή στο λόφο Κοτρώνι Καπανδριτίου και η σημασία των ευρημάτων της κατά την Πρώιμη Εποχή του Σιδήρου και την Αρχαϊκή περίοδο

16.00–16.15 **Δημάκη Ιωάννα**

Κατάλοιπα του φαληρικού λιμένα και των επιπέδων χρήσης της ευρύτερης ακτής του

16.15–16.35 *Συζήτηση / Discussion*

16.35–17.00 *Διάλειμμα / Coffee Break*

17.00–17.15 **Ασημάκου Ελένη**

Ένα τεχνικό έργο των πρώιμων ιστορικών χρόνων στην Ανάβυσσο

17.15–17.30 **Bergemann Johannes, Docter Roald, Alexandridou Alexandra, Klug Rebecca, Stal Cornelis, Drillat Quentin, Regnier Killian**

An Early Iron Age house in Thorikos – New evidence from excavations in 2021/2022

17.30–17.45 **Papadatos Yannis, Vavouranakis Giorgos, Dimakis Nikolas**

The Late Bronze Age–Early Iron Age transition at Plasi, Marathon: new evidence from the excavations of the National and Kapodistrian University of Athens

17.45–18.00 **Mazarakis Ainian Alexandros, Vlachou Vicky, Chatzinikolaou Eleni**

(Mapping) Household organization in Early Iron Age Oropos

18.00–18.20 Συζήτηση / Discussion

18.20 Reception

ΠΑΡΑΣΚΕΥΗ 9 ΔΕΚΕΜΒΡΙΟΥ / FRIDAY 9 DECEMBER

ΙΕΡΑ ΚΑΙ ΛΑΤΡΕΥΤΙΚΕΣ ΠΡΑΚΤΙΚΕΣ SANCTUARIES AND CULT PRACTICES

09.30–09.45 **Van Damme Trevor**

New Early Iron Age finds from the Mycenaean fountain on the North Slope of the Acropolis

09.45–10.00 **Σιουμπάρα Ελισάβετ**

Το μυκηναϊκό τείχος της Ακρόπολης των Αθηνών, η εξελικτική του πορεία ως τα Περσικά και η συμβολή του στον καθορισμό του περιβάλλοντος χώρου του ιερού της Αθηνάς

10.00–10.15 **Livieratou Antonia**

The pottery assemblage from the Kokkinogenis plot in the area of Plato's Academy, Athens, and its ritual implications

10.15–10.30 **Παλαιοκρασσά Λυδία, Πετράκης Μανόλης, Ρογκενμπούγκε Μισέλ**

Η λατρεία στο ιερό του Διός Παρνησιίου μέσα από τα μεταλλικά αντικείμενα

10.30–10.40 Συζήτηση / Discussion

10.40–11.00 Διάλειμμα / Coffee Break

11.00–11.15 **Kaoura Ioulia**

The "Solonian" Telesterion revisited: the old and a new reconstruction

11.15–11.30 **Κακαβογιάννη Όλγα**

Το θρησκευτικό κέντρο του αρχαίου δήμου Μυρρινούντος κατά τους προκλασικούς χρόνους

11.30–11.45 **Kakavogianni Olga, Andrikou Eleni, Petrocheilos Nikolaos**

έν δὲ Πρασιεῦσιν Ἀπόλλωνός ἐστι ναός (Paus. 1.31.2): The material dated from the Late Helladic to the Archaic period

11.45–12.05 Συζήτηση / Discussion

12.05–12.30 Διάλειμμα / Coffee Break

ΟΙΚΟΝΟΜΙΑ ΚΑΙ ΠΑΡΑΓΩΓΗ ECONOMY AND PRODUCTION

12.30–12.45 **Bonnier Anton, Fachard Sylvian**

Agriculture, land use, and environment in Early Iron Age and Archaic Attica

12.45–13.00 **Dimova Bella**

Textile economy in Athens during the Early Iron Age and the Archaic period

13.00–13.15 **Hulek Frank**

Laurion in late Archaic times: new data from a survey at Ari near Anavyssos

13.15–13.30 **Στάθη Μαρία, Μπούφαλης Άγγελος**

Νέα στοιχεία για την οικονομική δραστηριότητα στη Λαυρεωτική κατά την Αρχαϊκή περίοδο

13.30–13.45 **Μουγγάι Μαρία**

Ευρήματα Γεωμετρικών χρόνων από την ανασκαφή στο οικόπεδο Μακρυγιάννη, για την κατασκευή του σταθμού του ΜΕΤΡΟ "Ακρόπολη"

13.45–14.00 **Μπουγάτσου Ιωάννα**

Προκαταρκτική παρουσίαση καταλοίπων Γεωμετρικών χρόνων από την ανασκαφή στο Οικόπεδο Μακρυγιάννη για την ανέγερση του Μουσείου Ακρόπολης

14.00–14.20 Συζήτηση / Discussion

14.20–16.30 Διάλειμμα / Break

16.30–18.30 Συνεδρία Poster / Poster session

Μουσείο Παύλου και Αλεξάνδρας Κανελλοπούλου (Θεωρίας 12, Πλάκα) / Paul and Alexandra Canellopoulos Museum (12, Theorias Street, Plaka)

ΣΑΒΒΑΤΟ 10 ΔΕΚΕΜΒΡΙΟΥ / SATURDAY DECEMBER 10

ΤΑΦΙΚΕΣ ΠΡΑΚΤΙΚΕΣ BURIAL CUSTOMS

09.30–09.45 **Ronnberg Maximilian**

Funerary variability in Early Iron Age and Early Archaic Attica

09.45–10.00 **Ruppenstein Florian**

The Kerameikos in the Early Iron Age and in modern scholarship: an overview

10.00–10.15 **Σακκά Νίκη**

Ταφές Γεωμετρικών χρόνων στο οικόπεδο Μακρυγιάννη

10.15–10.30 **Κοκκολιού Τώνια**

Νέα στοιχεία από την σωστική ανασκαφή της οδού Αθ. Διάκου 7, νοτιοανατολικά της Ακροπόλεως

10.30–10.45 **Βλαντή Δάφνη**

Οι εγχυτρισμοί από το Υστερογεωμετρικό – Αρχαϊκό νεκροταφείο στην οδό Σαπφούς

10.45–11.00 **Chryssoulaki Stella, Alexandridou Alexandra, Pappas Ioannis**

«Φαληρόθεν». The Attic funerary landscape viewed from Phaleron

11.00–11.20 Συζήτηση / Discussion

11.20–11.45 Διάλειμμα / Coffee Break

11.45–12.00 **Παπαγγελή Καλλιόπη**

Ελευσίνα: συστάδα τάφων Γεωμετρικής περιόδου, στην παρυφή της Ιεράς οδού

12.00–12.15 **Γαλάτη Σοφία**

Η Ανατολίζουσα περίοδος στο αρχαίο νεκροταφείο της Κηφισιάς

12.15–12.30 **Χατζηδημητρίου Αθηνά**

Ταφή Υστερογεωμετρικών χρόνων από την Άνοιξη Αττικής

12.30–12.45 **Γιαμαλίδη Μαίρη, Χριστακοπούλου Γιούλικα**

Νεκροταφείο Υστερογεωμετρικών/Αρχαϊκών/Κλασικών χρόνων στη Βούλα Αττικής.
Μια προκαταρκτική προσέγγιση στη διαχρονική εικόνα της πολιτισμικής ιστορίας της
θέσης μέσα από τις ταφικές πρακτικές

12.45–13.00 **Καζαζάκη Χριστίνα**

Λαθούριζα Βάρης. Ανασκαφή τάφων της Υστερογεωμετρικής περιόδου

13.00–13.20 Συζήτηση / Discussion

13.20–15.00 Διάλειμμα / Break

15.00–15.15 **Καζά–Παπαγεωργίου Κωνσταντίνα**

Ο δήμος του Ευωνύμου πριν και μετά την πολιτειακή μεταρρύθμιση του Κλεισθένη,
μέσα από γνωστά και νέα ταφικά σύνολα

15.15–15.30 **Πέτρου Κατερίνα**

Νεκροταφείο των Γεωμετρικών, Αρχαϊκών και Κλασικών χρόνων στη Μερέντα
Μαρκοπούλου Μεσογαίας

15.30–15.45 **Δημητριάδου Ειρήνη**

Τμήμα αρχαίου παρόδιου νεκροταφείου στη θέση Πούσι Καλογέρι στο Μαρκόπουλο
Μεσογαίας

15.45–16.00 **Μέξη Μαρία, Ντούνη Κερασία, Παπαφλωράτου Ελένη**

Από την κοινότητα στον δήμο, συνέχεια στη χρήση του χώρου. Πρόσφατα ταφικά
ευρήματα των Γεωμετρικών χρόνων από την Παιανία

16.00–16.15 **Vlachou Vicky**

Exploring the funerary landscape of Early Iron Age Marathon

16.15–16.35 Συζήτηση / Discussion

16.35–17.00 Διάλειμμα / Coffee Break

ΜΕΛΕΤΗ ΣΚΕΛΕΤΙΚΩΝ ΚΑΤΑΛΟΙΠΩΝ

STUDY OF HUMAN REMAINS

17.00–17.15 **Κοντοπανάγου Μαριλένα, Λάγια Άννα**

Η παρουσία βρεφικών οστών σε καύσεις από το νεκροταφείο των Υπομυκηναϊκών–
Πρωτογεωμετρικών χρόνων επί της οδού Ηρώδου Αττικού 2 στην Αθήνα

17.15–17.30 **Buikstra Jane, Prevedorou Eleanna, Shea Timothy**

Deathscapes and lifescapes between the sea and the asty: the Phaleron cemetery

17.30–17.45 **Συρογιάννη Αλεξάνδρα**

Η καύση των σωμάτων ως ταφική πρακτική στην Αττική της Αρχαϊκής περιόδου:
ιατροδικαστική προσέγγιση, βάσει νέων περιπτώσεων από την ανασκαφή του οικοπέδου
του Ιδρύματος Σ. Νιάρχος στο Δέλτα Φαλήρου

17.45–18.00 **Lagia Anna, Patterson Sydney**

The treatment of infants and children in the Geometric and Archaic periods: infant
burials from the cemeteries of Thorikos

18.00–18.15 Συζήτηση / Discussion

ΚΥΡΙΑΚΗ 11 ΔΕΚΕΜΒΡΙΟΥ / SUNDAY DECEMBER 11

ΥΛΙΚΟΣ ΠΟΛΙΤΙΣΜΟΣ

MATERIAL CULTURE

09.30–09.45 **Kotsonas Antonis**

The “Cultural Backwardness” of early Attica? A materialist perspective on the Attic epigraphic record of the 8th and 7th centuries BCE

09.45–10.00 **Kiderlen Moritz, Hein Anno, Lis Bartek, Papadopoulos John**

Athenian bronze tripods from the north slope of the Acropolis

10.00–10.15 **Houby–Nielsen Sanne**

New light on the female ivory figurines and bone plaques from Dipylon tombs XIII and XI

10.15–10.30 **Poulou Tatiana**

Athenian Geometric gold jewellery: the female elite of Middle–Geometric Athens reconsidered

10.30–10.40 Συζήτηση / Discussion

10.40–11.00 Διάλειμμα / Coffee Break

11.00–11.15 **Αλεξανδροπούλου Άννα**

Η πρωτοαττική κεραμική από το νεκροταφείο του Φαλήρου

11.15–11.30 **Πετράκης Μανόλης, Παναγοπούλου Αικατερίνη, Ζαχαριάς Νικόλαος**

Συνδυαστική μελέτη μεταλλικών αντικειμένων των Γεωμετρικών και Αρχαϊκών χρόνων από το νεκροταφείο στο Δέλτα Φαλήρου

11.30–11.45 **Σκαράκη Βασιλική**

Αττικό εργαστήριο σφραγιδολίθων του 7ου αι. π.Χ. Το σύνολο από το ιερό της Αρτέμιδος Βραυρωνίας

11.45–12.00 **Κολοτούρου Κατερίνα**

Τα μεταλλικά ευρήματα από τη Σκάλα Ωρωπού

12.00–12.15 **D’Acunto Matteo**

Attic pottery of the 8th – 7th centuries BC in the Central and Western Mediterranean: exchange systems and networks between Greek communities and native peoples

12.15–12.35 Συζήτηση / Discussion

12.35–13.00 Διάλειμμα / Coffee Break

ΕΠΑΦΕΣ ΚΑΙ ΔΙΚΤΥΑ

INTERACTIONS AND NETWORKS

13.00–13.15 **Arrington Nathan**

Protoattic pottery in its regional and Mediterranean contexts

13.15–13.30 **Καλλιγά Κυριακή**

Η Αττική στη Βοιωτία. Η παρουσία Αθηναίων αγγειογράφων στη Θήβα και η γένεση του πρωτοβοιωτικού και του μελανόμορφου βοιωτικού ρυθμού

13.30–13.45 **Logothetis Dimitris, Roussos Philippos**

Aegyptiaca Atheniensi et Attica. Preliminary remarks on Egyptian and Egyptianizing artefacts from Early Iron Age Athens, Attica, and the Saronic Gulf

13.45–14.00 Συζήτηση / Discussion

14.00–15.00 Συμπεράσματα – Γενική συζήτηση / Concluding remarks – General discussion__

Please visit the sites: www.esag.swiss/aa2022, www.cam.ac.uk/en/attica_conference

**11TH EDITION OF THE INTERNATIONAL
CONFERENCE ON THE APPLICATION OF
RAMAN SPECTROSCOPY IN ART AND
ARCHAEOLOGY (RAA2023), NATIONAL
GALLERY-ALEXANDROS SOUTZOS
MUSEUM, SEPTEMBER 2023, ATHENS,
GREECE**

Dear Raman Enthusiasts!

We warmly invite you to the 11th edition of the International Conference on the Application of Raman Spectroscopy in Art and Archaeology (RAA2023). The RAA2023 conference will be hosted by the National Gallery-Alexandros Soutzos Museum, located in the heart of Athens, Greece, in collaboration with Ghent University, Belgium. Moreover, included in the RAA2023 programme a two-day Raman spectroscopy training school for students and early career researchers, will be organized.

4-5 September 2023, Raman Spectroscopy Training School
6-9 September 2023, RAA2023 Conference

After the interruption of the RAA meetings due to the global pandemic we proudly announce that we are working hard on the preparations of the 11th edition, in Athens. This conference, will be in line with previous RAA conferences and maintain the tradition to connect people who are interested in combining art and archaeology and Raman spectroscopy. Therefore, this conference is organised as an in-person conference and no on-line sessions are foreseen.

More information can be found at the website of the RAA2023 conference by following the link below.

<https://www.raa2023.ugent.be>

Note that the abstract submission will open on 19 December 2022.

Until then, we kindly invite you to stay tuned by participating to a quick poll of attendance: thus, we can keep you informed on the latest news of the Raman spectroscopy training school and the RAA2023 conference. Please follow the link, <https://www.raa2023.ugent.be/attendance>, or visit the RAA2023 website.

Information regarding both the Raman spectroscopy training school and the RAA2023 conference, will be continuously updated on our website. For any questions do not hesitate to contact us by email to raa2023@ugent.be.

On behalf of the organizing committee of the 11th International Conference on the Application of Raman Spectroscopy in Art and Archaeology (RAA2023) we hope to welcome you in September 2023 in Athens!

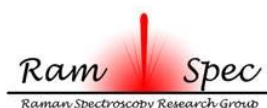
The Chairs of RAA2023

Dr. Anastasia Rousaki, Ghent University, Ghent, Belgium

&

Dr. Eleni Kouloumpi, The National Gallery-Alexandros Soutsos Museum, Athens, Greece

 RAA 2023 - International Conference on the Application of Raman Spectroscopy in Art and Archaeology



**WORKSHOPS: EXPLORING CRAFT SPACES:
A NEW INSIGHT INTO THE ARCHAEOLOGY
OF POTTERY PRODUCTION /
ARCHÉOLOGIE DE LA PRODUCTION
CÉRAMIQUE ET DES ESPACES
ARTISANAUX : REGARDS CROISÉS,
DECEMBER 9, 2022, PARIS, FRANCE**

On the 9th of December 2022, the research group ArScAn organise in the University of Paris 1 Panthéon Sorbonne a workshop on the study of pottery production spaces. The aim is to reunite an interdisciplinary community of researchers interested in this theme.

From the 8th millennium BCE onwards, pottery production developed in Southwestern Asia and became a significant trait of Neolithic societies. Ceramic material is widely adopted. It represented a revolution on several scales and quickly constituted an important part of production activities. The Vepmo and Gama teams of the research group ArScAn in Paris, driven by an interdisciplinary questioning, are opening the discussion on the understanding of this craft spaces. With multiple activities scattered or clustered within the same workspace, craft zones are difficult to describe and can be tackled by a great diversity of approaches to interpret their organization and functioning: architecture and building techniques, activities pattern, material distribution and raw material analysis, environmental studies, ethnoarchaeology and experimentation, etc. Thus, the objective of this workshop is to propose a transdisciplinary meeting about the methodologies of studying pottery manufacture sites, through examples from various contexts from prehistoric times to the contemporary period, and with a special interest in alternative approaches.

The workshop is coordinated by Claire Padovani (Paris 1 ArScAn Vepmo), Julie Flahaut (Inrap, Paris Nanterre, ArScAn Gama) and Sonja Willems (UCL/MRAH, ArScAn Gama) and will be moderated by Valentine Roux (CNRS Temps) and Pascale Ballet (Paris Nanterre, CNRS ArScAn Espri). The programme is available below, or through this link with the booklet of abstract: <https://calenda.org/1027994>

The admission on site is free and the event will be broadcast by Zoom.

If you want to receive the connection link a few days before the workshop, please register via this form:

<https://forms.gle/WCZhz9R8Tq6Fis7F8>

The proceedings of the workshop will be published in English in a special issue of the Journal of Archaeological Science: Reports

(<https://www.journals.elsevier.com/journal-of-archaeological-science-reports/call-for-papers/call-for-papers-exploring-craft-spaces-a-new-insight-into-the-archaeology-of-pottery-production>)

The call is open to additional papers and runs until the 15th of April 2023. If you are interested, do not hesitate to follow the link or contact Claire Padovani (claire.padovani@etu.univ-paris1.fr) for any information.

PROGRAMME

- 8h45 : Accueil des participants et introduction des modératrices V. Roux et P. Ballet
- 9h00-9h30: Une étude ethnoarchéologique de l'atelier de potier à Desouk (Gouvernorat de Kafr-el-Sheikh, Égypte). A. Dupond Delaleuf (Asie Centrale), Guy Lecuyot (UMR 8546 - AOrOc), Vincent Bernollin (UMR 8546 - AOrOc), Arthur Laenger, Aline Emery-Barbier (UMR 8068 - Temps)
- 9h30-10h00: Replacer les chaînes opératoires dans leur espace et en retracer les enchevêtrements. L'évolution de l'atelier de Logardan (Kurdistan irakien) à la fin du 3ème millénaire av. J.-C. J. S. Baldi (CNRS - Archéorient)
- 10h00-10h30: Les ateliers de potier de Gird-i Bazar au Kurdistan d'Irak (1200-800 av. J.-C.) : À la recherche des espaces opératoires pour façonner les vases. J.-J. Herr (LMU Munich)
- 10h30-11h00: Pause café
- 11h00-11h30 : Un outil original dans la chaîne opératoire de production des céramiques romaines dans l'atelier de potier de Vermand (Aisne): les estèques en silex. F. Bostyn (Paris 1, UMR 8215 Trajectoires), N. Cayol (SRA – Hauts de France/ UMR 8215 Trajectoires)
- 11h30-12h00 : Exploring Ceramic Pyrotechnology at the Dinka Settlement Complex (Iraqi Kurdistan) : An Integrated Approach to the Study of Kilns and Pottery. S. Amicone (Université de Tübingen, UCL), A. Dinckal (Université de Tübingen, Universidad de La Laguna), S. Gur-Arieh (University of Haifa, LMU), B. Solard (Université de Tübingen), A. Squitieri (Université de Heidelberg), M. Frencken (Université de Tübingen), J.J. Herr (LMU Munich), C.E. Miller (Université de Tübingen, Université de Bergen), C. Berthold (Université de Tübingen)
- 12h00-12h30 : Études archéomagnétiques d'ateliers de potiers en France : de la datation des fours au développement d'un outil chronologique pour la production céramique. A. Genevey (CNRS - LAMS)
- 12h30–13h45 : Pause déjeuner
- 13h45-14h15 : Développement d'un protocole de fouille pour les structures de cuisson à partir de l'intervention de Famars-Technopôle phase 2. S. Willems (UCL-MRAH, ArScAn Gama), B. Favennec (Inrap, UMR 5140 et 5640)
- 14h15-14h45 : Réexaminer les débuts de la pyrotechnologie céramique en Asie du sud-ouest, 7e-6e millénaire av. n. è. C. Padovani (Université Paris 1, ArScAn-Vepmo)

· 14h45-15h15 : Les structures de cuisson dans la civitas des Viromanduens (Hauts-de-France/Aisne) : comparaisons et organisation. D. Marechal (Inrap), C. Hosdez (Inrap, Gama), J. Flahaut (Inrap, Paris Nanterre, Gama), V. Visquenel-Schlosser (Inrap, Traces), S. Willems (UCL - MRAH, Gama)

· 15h15-15h45 : Remarques méthodologiques sur la fouille et l'étude des structures de production des ateliers de potiers et de tuiliers-briquetiers de l'Antiquité à l'époque contemporaine. F. Thuillier (Inrap, Aix-Marseille Université)

15h45-16H15 : Pause café

· 16h15-16h45 : Conduits de drainage et gestion de l'eau des zones de production en Mésopotamie au début de l'âge du bronze : une question d'approvisionnement, de drainage ou de contrôle de l'eau dans les environnements marécageux ? M. Zingarello (Université de Rome, La Sapienza)

· 16h45-17h15 : Appréhender le combustible des fours de potiers à travers l'archéobotanique. L'exemple du site de Logardan, Kurdistan irakien (3e mill. av. n. è.). C. Douché (Université d'Oxford)

· 17h15-17h45 : Production du combustible et gestion des boisements en contexte potier en Languedoc (Antiquité-Moyen Âge). Approche anthracologique et antracochronologique. J. Chardonneau-Henneuse (ASM UMR 5140, Université Paul-Valéry Montpellier III), C. Vaschalde (Mosaïques Archéologie), B. Brossier (CNRS - ISEM UMR 5554), B. Favennec (Inrap, UMR5140 et 5640), L. Chabal (CNRS - ISEM UMR 5554, Université de Montpellier), J.-F. Terral (Université de Montpellier, ISEM UMR 5554), S. Mauné (CNRS - ASM UMR 5140)

· 17h45-18h00 : Conclusions de la journée par les modératrices V. Roux et P. Ballet

**INTERNATIONAL WORKSHOP "ANE
ASTRAL SCIENCE & THE
INTERPRETATION OF THE UNIVERSE..."**,
NAPLES, DECEMBER 14, 2022

"Of stars and wedges. Ancient Near Eastern astral science as a case study for the interpretation of the universe in ancient cultures"

International workshop on the occasion of the exhibition 'Spazio (al futuro)' at Città della Scienza, Naples

Wednesday, 14 December 2022, 4–7 PM CET

Università di Napoli 'L'Orientale', Palazzo Corigliano, Sala conferenze, Piazza San Domenico Maggiore 12 Napoli, Free admission

Link for following the workshop in streaming:

<https://us02web.zoom.us/j/82463673507>

Programme

Michele Cammarosano: Introduction

Lorenzo Verderame (Sapienza Università di Roma): "Seconda stella a destra. The Sumerian tradition and the earliest astral science"

Mathieu Ossendrijver (Freie Universität Berlin): "The Sky over Babylon. Mesopotamian Observations and Predictions of Planetary Motion"

Andreas Müller-Karpe (Philipps-Universität Marburg): "Studies on Archaeoastronomy in Ancient Anatolia"

Round table discussion chaired by Gian Pietro Basello (University of Naples 'L'Orientale') and Mauro Gargano (INAF Capodimonte Observatory)

See for info & poster: <https://cuneiform.neocities.org/starsandwedges.html>

9TH CONFERENCE IN AEGEAN ARCHAEOLOGY, UNIVERSITY OF WARSAW (POLAND) AND ONLINE, JUNE 19-20, 2023

Dear Colleagues and Friends,

We invite you to participate in SYMPOZJUM EGEJSKIE: 9TH CONFERENCE IN AEGEAN ARCHAEOLOGY, which will take place in hybrid mode at the University of Warsaw (Poland) and online on June 19th and 20th, 2023.

Proposals for conference presentations are especially welcomed from early career researchers, such as PhD students or candidates, and scholars who have already completed their doctoral research and recently obtained their title. Attendance and participation are free. For further detailed and practical information, as well as updates, you can also visit the conference's webpage on Facebook ([\) and our departmental website](https://nam10.safelinks.protection.outlook.com/?url=https%3A%2F%2Ffb.me%2F%2F1YT6NdUVh&data=05%7C01%7Caegeanet%40lists.ku.edu%7C62aff46ce80b4ba54e3808dad2dd634e%7C3c176536afe643f5b96636feabbe3c1a%7C0%7C0%7C638054145540167849%7CUnknown%7CTWFpbGZsb3d8eyJWJoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ikl1haWwiLCJXVCi6Mn0%3D%7C3000%7C%7C%7C&sdata=Pg4RRNtmrU0Sk%2BfC1adDS2F%2FwTy54ufU62l6rmlU5Y%3D&reserved=)

(<https://nam10.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.archeologia.uw.edu.pl%2Fen%2Fdepartment-of-aegean-and-textile-archaeology%2F&data=05%7C01%7Caegeanet%40lists.ku.edu%7C62aff46ce80b4ba54e3808dad2dd634e%7C3c176536afe643f5b96636feabbe3c1a%7C0%7C0%7C638054145540167849%7CUnknown%7CTWFpbGZsb3d8eyJWJoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ikl1haWwiLCJXVCi6Mn0%3D%7C3000%7C%7C%7C&sdata=4OsNG%2Bao9AalYXYLPXUAHtsoQ%2BbFIjtS%2BQi%2B%2BkfpkE%3D&reserved=0>).

If you would like to participate, please submit a title, abstract (max. 250 words in English), your personal details (title, full name, affiliation, email address) and a short personal biography (max. 100 words including ORCID number and/or research webpage links) before March 20th, 2023 to egea@uw.edu.pl.

We plan to publish the proceedings of this conference in the next volume of "Symposium Egejskie". Papers in Aegean Archaeology a peer-reviewed series edited by the conference organisers and published by Brepols.

Should you have any questions regarding the conference, please feel free to contact us at any time.

We are looking forward to seeing you in Warsaw or online!

With our kindest regards and best wishes for 2023,

The organisers

Stephanie

Aulsebrook

Katarzyna Ą»ebrowska

Agata Ulanowska

Kazimierz Lewartowski



ΘΕΣΕΙΣ ΕΡΓΑΣΙΑΣ/ΥΠΟΤΡΟΦΙΕΣ –
JOB VACANCIES/FELLOWSHIPS

THE MALCOLM H. WIENER LABORATORY
FOR ARCHAEOLOGICAL SCIENCE
FUNDING OPPORTUNITIES

The Malcolm H. Wiener Laboratory for Archaeological Science of the American School of Classical Studies at Athens offers fellowship funding for study at the laboratory. Applicants from any college or university worldwide, as well as independent scholars, are welcome to apply.

Priority will be given to question-driven research projects that address substantive problems through the application of interdisciplinary methods in the archaeological sciences. Wiener Laboratory facilities are especially well-equipped to support the study of human skeletal biology, archaeobiological remains (faunal and botanical), environmental studies, geoarchaeology (particularly studies in human-landscape interactions and the study of site formation processes), and ancient materials studies.

Fellowship Opportunities for the Malcolm H. Wiener Laboratory:

Research Associate for 2023-2024

Current competition begins in fall 2022 for the 2023-2024 academic year (January 15, 2023 deadline for applications); Term variable, up to 9 months.

Eligibility limited to individuals actively enrolled in a graduate program and individuals with a higher-level degree in a relevant discipline.

Stipend: variable up to \$7,000

Pre-Doctoral Fellowship for 2023-2025

Current competition begins in fall 2022 for the 2023-2025 term (January 15, 2023 deadline for applications); 2-year term.

Eligibility limited to individuals actively enrolled in a graduate program who have passed all qualifying exams and have an approved Ph.D. proposal.

Stipend: \$20,000 per annum

Post-Doctoral Fellowship for 2023-2026

Current competition begins in fall 2022 for the 2023-2026 term (January 15, 2023 deadline for applications); 3-year term.

Eligibility limited to individuals who have received their Ph.D. within the last seven (7) years.

Stipend: \$35,000 per annum

Programmatic Post-Doctoral Fellowship for 2024-2027 Competition begins in fall 2023 for the 2024-2027 academic years; 3-year term.

Eligibility limited to any archaeological project affiliated with the ASCSA, current and former permit holders. A specific candidate for the fellowship must be named in the

application who has received their Ph.D. and has a demonstrable record of research and publication directly relevant to the project.

Stipend: \$35,000 per annum

For more information and instructions on how to apply:

<https://www.ascsa.edu.gr/research/wiener-laboratory/fellowships-and-research-associate-appointments>

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

FELLOWSHIP: EINSTEIN CENTER **CHRONOI, BERLIN**

Einstein Center Chronoi is now accepting applications for fellowships for the calendar year 2024.

We welcome project proposals that fit the annual theme “Dynamics of time”.

Einstein Center Chronoi has been founded to enable researchers from Berlin along with guests from all over the world to address issues on the topic “Time and Awareness of Time in Antiquity” in an interdisciplinary research environment. The Einstein Center Chronoi yearly appoints fellows who represent a broad spectrum of academic backgrounds and qualifications.

Einstein Center Chronoi fellows will ideally work in collaboration with a tandem partner in Berlin, e.g. Freie Universität Berlin, Humboldt-Universität zu Berlin, Prussian Cultural Heritage Foundation (SPK), Berlin-Brandenburgische Academy of Sciences and Humanities (BBAW), and Max Planck Institute for the History of Science (MPIWG). Potential fellows are invited to work at the Einstein Center Chronoi in Berlin to conduct innovative and interdisciplinary research on the topic of "time" and exchange ideas with other researchers contributing to the research agenda of the center.

The EC-C’s annual theme “Dynamics of Time” is focused on the perception of Time, not as universal, static, homogenous, or linear but as heterogeneous, dynamic, and multidirectional. How it is perceived and experienced varies over time as well as across different societies, within societies and over the life cycle. Particularly, during periods of crisis, time often appears condensed, to move faster or to slow down. Historians correlate certain periods with processes of acceleration or deceleration, and terms such as “regression” and “recurrence” suggest a “reversibility” of the historical course.

Similarly, concepts like the “simultaneity of the non-simultaneous” assume the availability of different temporal states at any given moment.

Fellowship applicants are expected to have a doctoral degree. The duration of a fellowship can be between 1 and 12 months within the calendar year 2024. It is possible for fellowships starting in 2024 to extend into 2025 (if within the 12-month limit). Please note that applications should be sent by February 28, 2023.

Further information on the fellowship, on the annual theme, and the application form can be found here: <https://www.ec-chronoi.de/apply>.

For general inquiries, please do not hesitate to contact sekretariat@chronoi.org or fellowship-applications@chronoi.org.

Please visit the site: <https://www.ec-chronoi.de/apply>

FELLOWSHIP: PHD IN ANCIENT ASTRONOMY (FU BERLIN)

The project ZODIAC - Ancient Astral Science in Transformation" (ERC) based at Institute for the History of Knowledge in the Ancient World (FU Berlin) invites applications for a PhD position (3.5 years): <https://tinyurl.com/6v8v7v7k>.

The successful applicant will collaborate with Principal Investigator Mathieu Ossendrijver and the ZODIAC team to pursue a PhD project on the history of mathematical astronomy with a focus on the accuracy of astronomical computation in Babylonia and the Greco-Roman world.

Preference will be given to candidates with a background in an exact science (astronomy, physics, mathematics, informatics) and a field of ancient philology (e.g., Assyriology; classics) or history of science.

The PhD position offers a unique opportunity to work in an international and interdisciplinary research environment. The successful applicant will be based at ZODIAC and enrolled in the doctoral program Ancient Philosophy and History of Ancient Science (APhil/HistAS) of the Berlin Graduate School of Ancient Studies (BERGSAS, www.berliner-antike-kolleg.org/en/bergsas).

Job description:

- * complete a PhD project on ancient mathematical astronomy with a focus on the accuracy of astronomical computation
- * participate in ZODIAC research meetings and contribute to the development of ZODIAC's research infrastructure
- * enroll in the Berlin Graduate School of Ancient Studies (BERGSAS)
- * present own research at conferences and workshops
- * participate in the organisation of ZODIAC workshops, public outreach and social media activities related to the PhD project

Requirements:

Master's degree in an exact science (e.g. astronomy, physics, mathematics, informatics) and/or an equivalent degree in another area relevant to the PhD project (history of science, Assyriology, classics, Egyptology)

Desirable:

- * bachelor or master's degree or documented skills in a relevant field of ancient philology (Assyriology; classics; papyrology; Demotic), cultural history, or history of knowledge of the ancient world.
- * experience with or interest in astronomical computation, both ancient and modern
- * very good analytical skills, relevant programming skills and academic writing skills
- * ability to work independently, good communicative skills, and team spirit
- * excellent English language skills (written and oral)

* strong motivation to complete a PhD dissertation in 3.5 years

Applications should include:

- * cover letter
- * complete curriculum vitae including list of publications if applicable
- * relevant certificates and documentation of qualification
- * exposé (max. 3 pages plus references) with an outline of the proposed dissertation project and research ideas
- * writing samples (MA thesis, papers, and/or publications) totaling at least 20 pages
- * names and contact details of two referees (those of shortlisted candidates will be contacted to provide letters of recommendation)

Receipt of application will be acknowledged. Applicants will be notified by email as soon as a decision is made. Short-listed applicants will be invited to an on-campus or online interview. For more information on the project ZODIAC see <https://www.geschkult.fu-berlin.de/en/e/zodiac/index.html>.

Applications should be sent by e-mail, together with significant documents, indicating the reference code, in PDF format (preferably as one document) to Herrn Dr. Mathieu Ossendrijver: wissensgeschichte@geschkult.fu-berlin.de

ΑΝΑΚΟΙΝΩΣΕΙΣ - ANNOUNCEMENTS

WIENER LABORATORY 2023 SUMMER PROGRAMS OFFERINGS

[Archaeological Soil and Sediment Micromorphology Course \(May 22-26, 2023\)](#)
[Field School on Site Formation, Stratigraphy, and Geoarchaeology in the Athenian Agora \(June 3-10, 2023\)](#)

Archaeological Soil and Sediment Micromorphology Course

Deadline: February 10, 2023

An intensive week-long course in Archaeological Micromorphology is offered by the Malcolm H. Wiener Laboratory for Archaeological Science. Dr. Panagiotis (Takis) Karkanas, Director of the Wiener Laboratory, and Dr. Paul Goldberg, Senior Visiting Professor, Institut für Naturwissenschaftliche Archäologie (INA), University of Tübingen, will lead the course, which will primarily focus on deciphering site formation processes and micro-stratigraphy. Students will receive instruction in optical mineralogy, description, and interpretation of micromorphological thin sections based on analysis of soil fabrics and sedimentary microstructures.

Training will include the study of:

- Soils and pedogenic processes
- Natural processes in archaeological sites (e.g. water and debris flows, wind-blown sediment, standing water sediment)
- Biological sediments (e.g., dung, coprolites, guano)
- Anthropogenic processes (e.g., burning, stabling, living and constructed floors, dumping and filling, trampling, raking, building materials)
- Post-depositional alterations (e.g., chemical diagenesis, bioturbation)

A maximum of 8 students will be accepted for the course. Preference is given to advanced students with a background in geoarchaeology, and preferably some exposure to optical mineralogy as well.

Training fee is 350 euros for the entire week. Accommodation is not provided, but we will offer recommendations and assistance to course participants in order to arrange accommodation themselves.

The course will take place from May 22-26, 2023. Applications should be submitted no later than February 10, 2023 via the [online application form](#). Applications will include a brief cover letter outlining the candidate's background and interest in participating in the course, a CV, and names and email addresses of two referees. Referees might be contacted for references after the application deadline, if necessary. Applicants will be notified in March. Participants who successfully complete the course of instruction will receive a certificate detailing the content of the course.

International Field School on Site Formation, Stratigraphy, and Geoarchaeology in the Athenian Agora

Deadline: February 15, 2023

The Malcolm H. Wiener Laboratory for Archaeological Science in collaboration with the ASCSA Excavations at the Athenian Agora offers a full week-long Field School on Site Formation, Stratigraphy, and Geoarchaeology in the Athenian Agora. Dr. Panagiotis (Takis) Karkanas, Director of the Wiener Laboratory, and Dr. Paul Goldberg, Senior Visiting Professor, Institut für Naturwissenschaftliche Archäologie (INA), University of Tübingen, will supervise the intensive field school. Registered students will be involved in interdisciplinary field research in the Athenian Agora primarily focused on archaeological context, geoarchaeology, and material sciences. Through field observations, laboratory analysis, and lectures, students will receive instruction in the study and analysis of archaeological sediments and deposits, as well as gain experience in the recording of stratigraphy and the understanding of site formation processes.

A maximum of 12 students will be accepted for the course. Preference is given to advanced students and post-docs with a background in archaeology, and preferably some exposure to the natural sciences.

The cost for Room and Board is 400 euros for the entire week. Travel costs to and within Athens are not included.

The course will take place from June 3 to June 10, 2023. Applications should be submitted no later than February 15, 2023 via the [online application form](#). Application materials include a brief cover letter explaining the candidate's interest in the course, a CV, a list of grades (unofficial transcript), and names and email addresses of two referees. Referees might be contacted for references after the application deadline, if necessary. Applicants will be notified in March.

Participants who successfully complete the course of instruction will receive a certificate detailing the content of the field school.

Textbooks: *Reconstructing Archaeological Sites 2019* by Panagiotis Karkanas and Paul Goldberg (Wiley Blackwell), *Practical and Theoretical Geoarchaeology, 2nd edition 2022* by Paul Goldberg, Richard I. Macphail, C Carey, and Y Zhuang (Blackwell), and *Microarchaeology 2010* by Stephen Weiner (Cambridge University Press).

A syllabus will be emailed three weeks before the start of the field school.

For further information or questions, please contact Dr. Panagiotis (Takis) Karkanas at tkarkanas@ascsa.edu.gr

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2023 ASSCSA SUMMER SESSION

Deadline for applications: January 9, 2023

The Summer Session program of the American School of Classical Studies at Athens is a six-week travel study course designed for those who wish to become acquainted with Greece and its major monuments, and to improve their understanding of the country's landscape, history, material culture, and literature from antiquity to the present. The 2023 Summer Session runs from June 12 to July 26, 2023, and its Director is Professor Glenn R. Bugh of Virginia Polytechnic Institute and State University.

Format: The ASCSA Summer Session has provided extensive exposure to Greece, ancient and modern, for generations of students of Classics and related fields. It has a strong academic component with participants researching and presenting topics on site and offers unique opportunities to interact with eminent archaeologists in the field. Roughly half of the session is spent in travel throughout Greece. Three trips give participants an introduction to the major archaeological sites and museum collections throughout the country. The remainder of the session is devoted to study of the museums and monuments of Athens and the surrounding area with day trips to such sites as Marathon, Sounion, and Eleusis. The Summer Session's commitment to presenting a comprehensive view of Greece's rich history and archaeology leads to long days and extensive walking in the hot Mediterranean summer. Participants must be able to cover very uneven, rocky terrain and endure temperatures well above 30°C for extended periods.

Click here for more information about the program, eligibility, cost, scholarships, and application details.

<https://nam10.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.ascsa.edu.gr%2Fprograms%2Fsummer-session&data=05%7C01%7Caegeanet%40lists.ku.edu%7C8a372768a3174f17a18f08daca3facb2%7C3c176536afe643f5b96636feabbe3c1a%7C0%7C0%7C638044672088833394%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ikk1haWwiLCJXVCi6Mn0%3D%7C3000%7C%7C%7C&data=5K2xa xyv2keGp6puyY2r4lR1P4wy6VGGX9JFTXkeb5I%3D&reserved=0>

2023 ASCSA Summer Seminars

The Summer Seminars of the American School of Classical Studies at Athens are 18-day programs that focus on specific cultural themes, historical periods, or geographical regions. The Seminars are led by exceptional scholars of Classics and related fields. Under their direction, participants study texts, visit archaeological sites and museums, and engage with expert guest speakers in order to deepen their understanding of Greece's landscape, history, literature, and material culture.

For Summer 2023, the two seminars are:

The Archaeology of Caves in Greece: Cult and Life through the Ages (June 5 to June 23, 2023) Participants will investigate life and cult stretching from the Paleolithic period to today, through archaeological and anthropological research focusing on caves. The course examines caves as living entities that actively shape local cultures as centers of

cult, active arenas of archaeological exploration, nodes of complex economic and religious landscapes, and major archaeological sites doubling as tourist attractions with a major impact on local economies. Attention will be paid to caves as carstic phenomena that have attracted various forms of human action (habitation, exploitation, cult, refuge, shelter) for millennia. The seminar will visit several caves as well as significant nearby sites and museums (e.g. Delphi, Athenian Acropolis). Taught by Professors Amy and Nassos Papalexandrou (University of Texas at Austin).

Locating Ancient Gender and Sexuality (July 3 - July 21, 2023) This seminar examines discourse about gender and sexuality within distinct cultures of ancient Greece, articulated through association with cities, sanctuaries, and liminal spaces. The program is structured through a comparative framework, studying social systems across space and time: analyzing Athens and its rivals of the classical period, Sparta, Corinth and Thebes. Literary traditions will be brought into conversation with archaeological evidence and the landscapes of Greece. Taught by Professors Kate Gilhuly and Bryan Burns (Wellesley College).

Internationally known scholars of Greek history, art, and archaeology will participate as guest lecturers in both seminars. Students are expected to give on-site reports, which they will prepare in their home libraries before the program begins. Committed to presenting a comprehensive view of Greece's rich history and archaeology, these seminars involve long days and extensive walking, often over uneven terrain, in the hot Mediterranean summer, where many days over 30°C can be expected.

Click here for more information about the program, eligibility, cost, scholarships, and application details.

<https://nam10.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.ascsa.edu.gr%2Fprograms%2Fsummerseminars&data=05%7C01%7Caegeanet%40lists.ku.edu%7C8a372768a3174f17a18f08daca3facb2%7C3c176536afe643f5b96636feabbe3c1a%7C0%7C0%7C638044672088833394%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6IklhaWwiLCJXVCi6Mn0%3D%7C3000%7C%7C%7C&sdata=p8I%2BTrJ%2FYukt6bGn8mOBRTGCfNmMWfpZsynMgxyPzsE%3D&reserved=0>

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Migration Myths and the End of the Bronze Age in the Eastern Mediterranean.
Cambridge: Cambridge University Press (2021).

<https://nam10.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.cambridge.org%2Fcore%2Felements%2Fmigration-myths-and-the-end-of-the-bronze-age-in-the-eastern-mediterranean%2FF0567FCB3FE75A0C83D326015C4C56DC&data=05%7C01%7Caeg%40lists.ku.edu%7C8a372768a3174f17a18f08daca3facb2%7C3c176536afe643f5b96636feabbe3c1a%7C0%7C0%7C638044672088833394%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6IklhaWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=DLI%2BnRyGVP5K9kFyCVsOrOaKSALLIQ23B4DQGGEC3Eo%3D&reserved=0>

ABK webpage:

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TÆSP webpage:

<https://nam10.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.gla.ac.uk%2Fschools%2Fhumanities%2Fresearch%2Farchaeologyresearch%2Fprojects%2Ftaesp%2F&data=05%7C01%7Caeg%40lists.ku.edu%7C8a372768a3174f17a18f08daca3facb2%7C3c176536afe643f5b96636feabbe3c1a%7C0%7C0%7C638044672088833394%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6IklhaWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=KhjqmkuWTKbvF%2FqKqrw0091%2BN1ep1vc1iluaFVa99Qc%3D&reserved=0>

SCSP public webpage:

<https://nam10.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.scsp.arts.gla.ac.uk%2F&data=05%7C01%7Caeg%40lists.ku.edu%7C8a372768a3174f17a18f08daca3facb2%7C3c176536afe643f5b96636feabbe3c1a%7C0%7C0%7C638044672088833394%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6IklhaWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=vYDdbtDjSJSI9C8uXKIZ2Aa7bcZk%2FFPKAm0zRbrK%2BeoI%3D&reserved=0>

Phorades webpage:

<https://nam10.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.scsp.arts.gla.ac.uk%2FPhorades%2F&data=05%7C01%7Caeg%40lists.ku.edu%7C8a372768a3174f17a18f08daca3facb2%7C3c176536afe643f5b96636feabbe3c1a%7C0%7C0%7C638044672088833394%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6IklhaWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=oDJwYORr9hfdYUc5GktJw7cCjileXxI7onqZfGrpiu0%3D&reserved=0>

CALL FOR PAPERS: EDITED VOLUME ON OPTICAL MICROSCOPY AND SEM

Dear All,

Following on from our session at this year's EAA annual meeting, 'Session 90: The Technology and Use of Metals in the Prehistoric Eastern Mediterranean: Recent Advances through Microscale Analysis', we are excited to inform you that the proceedings will be published as part of the EAA Themes series. For this edited volume, we would like to extend the spatial and chronological scope beyond the prehistoric Eastern Mediterranean. Therefore we invite scholars who are incorporating optical microscopy and SEM into their archaeometallurgical research to contribute to this volume. The purpose of the volume is to showcase what optical microscopy and SEM have made possible in the field of metallurgy and to exchange ideas about best practice. The volume will be edited by Stephanie Aulsebrook, Betty Ramé and Valentine Martin.

If you would like to contribute a paper to the volume, please contact s.aulsebrook@gmx.com with a preliminary title and a two to three sentence summary of your suggested research topic by the end of this month. Any questions can be directed to the same address.

We look forward to hearing from you!

Stephanie, Betty and Valentine

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UNIVERSITY OF HAIFA AND ISRAEL **ANTIQUITIES AUTHORITY WIN** **GOVERNMENT FUNDING FOR** **INFRASTRUCTURE IN ARCHAEOLOGICAL** **SCIENCES**

Ruth Shahack Gross and Guy Bar-Oz of the School of Archaeology and Maritime Cultures at the University of Haifa and Yotam Asscher of the Israel Antiquities Authority won a major grant from Israel's Ministry of Science and Technology. The grant is aimed at establishing a national infrastructure Center for archaeological and conservation sciences and big data management. Israel Finkelstein will direct the Center and Thomas Levy of UCSD will head its steering committee.

The archaeological, conservation and digital sciences have experienced a quantum leap in Israel in recent years. The progress in these fields placed the country at the forefront of archaeological research. The new Center aims at advancing 5 fields that are currently absent or underdeveloped in Israel: archaeological biogeochemistry (stable isotope analysis), organic molecular residue analysis and conservation of archaeological materials at the University of Haifa; big data repositories and database of archaeological sites and artifacts at the Israel Antiquities Authority. These fields will be advanced by establishing new laboratories; the University of Haifa is committed to supporting its laboratories with additional resources.

The Center aims at advancing new methods in analytical chemistry, machine learning and artificial intelligence. The Center will promote projects of Israeli and international institutions on a competitive basis.

INSTAP THE CHANGING OF THE GUARD

Prof. Philip Betancourt has retired as Director of The Institute for Aegean Prehistory (INSTAP) on October 22nd. He is the founding Director of INSTAP and has served with dedication and distinction for the past 41 years.

The INSTAP Board of Trustees has elected as his successor Dr. Thomas Brogan, who has served as the Director of the INSTAP Study Center for East Crete since 1997. Dr. Brogan will remain at his post on Crete in his expanded role as Director of The Institute for Aegean Prehistory.

Dr. Susan Ferrence continues in her role as Director of the INSTAP Academic Press located in Philadelphia. Dr. Konstantinos Chalikias and Dr. Jason Earle, recently named Assistant Directors of The Institute for Aegean Prehistory, remain in those roles with a focus on Administration and Grants respectively.

Malcolm H. Wiener, the Founder of The Institute for Aegean Prehistory and the INSTAP Study Center for East Crete, retired as Vice President of both Boards. He remains an INSTAP Trustee and has accepted the title Chairman Emeritus for the Study Center.

Finally, the Trustees have elected as President of both Boards Prof. Jeffrey Soles, a long-serving Trustee of INSTAP and the INSTAP Study Center for East Crete and the director of the Mochlos Excavation Project.

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ΝΕΕΣ ΕΚΔΟΣΕΙΣ – NEW PUBLICATIONS

WHAT IF... LISTICLES ARE ACTUALLY AN ANCIENT FORM OF WRITING AND NARRATIVE?

JAMES VINCENT ON ONE OF HUMANITY'S OLDEST WRITING SYSTEMS, BY JAMES VINCENT

[Excerpted from *Beyond Measure: The Hidden History of Measurement from Cubits to Quantum Constants* by James Vincent. Copyright © 2022.
Available from W. W. Norton & Company, Inc.]

Measurement was a crucial organizing principle in ancient Egypt, but metrology itself does not begin with nilometers. To understand its place in human culture, we have to trace its roots back further, to the invention of writing itself. For without writing, no measures can be recorded. The best evidence suggests that the written word was created independently thousands of years ago by a number of different cultures scattered around the world: in Mesopotamia, Mesoamerica, China, and Egypt. But it's in Mesopotamia—present-day Iraq—where the practice is thought to have been invented first.

A brief sketch of the origin of writing goes like this: in the beginning there was the Thing, and the Thing needed counting. What the Thing was doesn't matter much. A flock of sheep, perhaps, or sheaves of barley: profits of the new system of settled agriculture, which had allowed cities with tens of thousands of occupants to appear for the first time in history. The women and men who dwelt in these cities wanted to keep track of their new wealth and decided to use clay tokens for the job.

These tiny objects, the size of game pieces, were shaped as cones, discs, triangles, and cylinders and can be found scattered throughout the archaeological record like errant dice. The earliest date back to 7500 BC, in what would become the Mesopotamian civilization of Sumer, home of the Sumerians. The tokens seem to have been useful, as they multiply in form and number over the centuries. As city life became more varied in Mesopotamia, with inhabitants trading not only raw materials like wool and metal, but also processed goods like oil, beer, and honey, more tokens were created to represent these resources.

Their appearance became more complex, with scratches added to their surface, adding a graphic element to their meaning. Fast forward a few millennia, and, like a shopper burdened with too much pocket change, the Mesopotamians were fed up with their clutter of tokens. To better organize them, they began making clay containers known as bullae to enclose them into groups. These bullae started appearing around 3500 BC, as bumpy spheres the size of tennis balls, filled with clay tokens and sealed like a baby's rattle. One bulla could then be used to track multiple items.

Without writing, no measures can be recorded.

This technology had its advantages and disadvantages. If you are, for example, a Sumerian priest recording tributes from farmers, you'd be happy that your clay spheres couldn't be tampered with, but annoyed that you couldn't check their contents without breaking them. So, one day, while making your latest bulla, before you put the tokens inside, you press them firmly on to the clay's wet exterior as a reminder of the contents.

It was the work of a moment but a crucial step, says archaeologist Denise Schmandt-Besserat, who first recognized the importance of these clay tokens as the precursors of modern writing. It was here, she says, that “three-dimensional tokens were reduced to two-dimensional markings” constituting “the first signs of writing.” And it was a profound cognitive leap. “It is the beginning of a new communication system, and certainly had to have reflected something enormous in the brain,” she says. “It was liberating.”

Over the centuries, this system evolved. First, instead of impressing tokens on to clay, scribes began tracing their outlines, creating pictographs, or pictures of words. Second, realizing that all the information they wanted was now stored on the exterior of the bullae and their contents were redundant, the scribes squashed these clay balls into thick tablets, removing the need for tokens altogether.

Third, they began using different signs to signify the item being counted and its quantity. Instead of tracing a pictograph of a jar of oil to represent each jar of oil, they began using separate symbols for “what the thing is” and “how much of it there is.” With this change, you have not only the beginning of formal number systems and writing, but also the beginning of measurement.

Throughout the course of the third millennium BC, the pictographs on the bullae would morph into increasingly abstract signs: series of wedges pressed into clay using cut reeds that represented syllables and consonants, not just objects. This is the script we know as cuneiform, meaning “wedge-shaped,” which was used by all the major Mesopotamian civilizations, including the Sumerians and their successors, the Babylonians and Assyrians.

By 2500 BC, this writing system had become “sufficiently plastic and flexible to express without difficulty the most complicated historical and literary compositions,” but from this very early period we've recovered only a handful of literary texts. Instead, the overwhelming majority of unearthed writing tablets—some tens of thousands—are administrative in purpose.

With this change, you have not only the beginning of formal number systems and writing, but also the beginning of measurement.

These were composed by a class of professional scribes, who were “the cohesive force that helped preserve and enrich” ancient Mesopotamia, fulfilling duties including “temple functionary, court secretary, royal counselor, civil bureaucrat, [and] commercial correspondent.”

The library they created is one of receipts, contracts, shopping lists, tax returns, deeds of sale, inventories, wage slips, and wills.

Over time, narrative writing like royal announcements and records of wars were added to the mix, but even these retain something of the catalogue format, listing provinces conquered, offspring born, and temples consecrated and desecrated.

There's some debate over whether this invention of writing enabled the first states to emerge, giving their rulers the ability to oversee and allocate resources, or whether it was the demands of the early states that in turn led to the invention of writing. Either way, the scribal arts offered dramatic new ways to process knowledge, allowing for not only superior organization, but also superior thinking. Some scholars argue that the splitting of noun and number on clay tablets didn't just allow kings to better track their taxes but was tantamount to a cognitive revolution: a leap forward that allowed humans to abstract and categorize the world around them like never before.

Lists may not seem like cognitive dynamite, but their proliferation appears to have helped develop new modes of thought in early societies, encouraging us to think analytically about the world. "The list relies on discontinuity rather than continuity," writes anthropologist Jack Goody. "[I]t encourages the ordering of the items, by number, by initial sound, by category, etc. And the existence of boundaries, external and internal, brings greater visibility to categories, at the same time as making them more abstract."

Think about how spoken language tends to place information in a definite context. When recalling your day, you might say: "I went to the shops and bought eggs, flour, and milk to make pancakes." The list, by comparison, abandons continuity for atomization, removing individual items from a wider narrative (to buy: eggs, flour, milk).

It fosters what psychologists call "chunking"—the process of breaking down large quantities of data into manageable subdivisions and measuring out the world in discrete packages. Most of us are aware instinctively of the benefits of this approach. When we're wracked by vague terror about tasks yet to be tackled, we often resort to list-making, paring down the madness of the world into something that can be managed one job at a time.

The scribal arts offered dramatic new ways to process knowledge, allowing for not only superior organization, but also superior thinking.

This categorization of knowledge in early Mesopotamian society is evidenced by what archaeologists call "lexical lists:" tablets that simply list different classes of objects like the index of an encyclopedia. The exact function of these lists, which cover everything from types of trees to body parts and names of gods, isn't entirely clear. They might have been used to teach vocabulary or as practice for scribes, but what they show is ancient humans grappling with the problem of classification.

As Goody argues, the process of constructing a thematic list "leads to increments of knowledge, to the organization of experience." It is a precursor to organized philosophical systems, and, eventually, to science. Centuries later, in the fourth century BC, Aristotle would turn the list format into the bedrock of his thinking by divvying up all of reality in his great work, the *Categories*. This grand taxonomy draws many arcane

distinctions: between the Eternal Mobile Substances (the heavens) and the Destructible Mobile Substances (the sublunary bodies); between the Unensouled Destructible Mobile Substances (elements) and the Ensouled Destructible Mobile Substances (living beings); and so on. None of the examples of this form prior to the ancient Greeks are anywhere near as philosophically complex, but they are elaborate and beautiful just the same.

One particularly famous example of the form comes from ancient Egypt and is dated to around 1000 BC: a product of the state's bureaucratic culture known as the Onomasticon of Amenopĕ. In its simplest form, the onomasticon is simply a list of some 610 entries: items that collectively span the known world. An introduction to the text states that it is to be used "for instruction of the ignorant and for learning all things that exist: what Ptah created, what Thoth copied down."

It begins with the natural world: the first entry is "sky," followed by "sun," "moon," and "star," before proceeding through "darkness" and "light," "shade" and "sunset," and tackling various earthly categories like "river-bank," "island," "sand," and "mud." After describing the Earth, it moves on to its occupants, beginning with the supernatural—"god," "goddess," and "spirit"—before progressing to the most important humans, starting with the royal court ("king" to "queen" to "king's mother"), then through high-ranking civil and military roles ("general" and "deputy of the fortress"), and then on to the wider world of work. This is the most granular section, with several hundred entries offering a detailed picture of Egyptian society. It starts with the professional artisans ("sculptor," "hour-keeper," and "astronomer") before moving on to the lower orders ("steersman," "herdsman," "gardener," and "dancer").

After the people have been dealt with, there's a section on the towns of Egypt, followed by types of building and terrain. After reaching the ground, we move on to survey its bounty: crops, vegetables, and other foodstuffs for over a hundred entries. The list ends when even these items have been broken down into their constituent parts, with the final three entries of raw meat, cooked meat, and spiced meat. As the list's author has promised, we've been shown "all things upon which Re [the sun god] has shone;" taken on a journey from the cosmic pantheon to the butcher's table in 610 easy steps.

The Egyptologist Alan Gardiner, who collated the various manuscripts that make up the text, was unimpressed. "Certainly there was never written a book more tedious and less inspired than the Onomasticon of Amenopĕ," he commented in 1947. But three decades later, Goody finds much more value in the list, noting how the onomasticon demonstrates "the dialectical effect of writing upon classification" to an unparalleled degree. The entire text is a lesson in the power of hierarchy, as it blends together the spiritual and terrestrial realms into one great spectrum. Binaries like "light" and "darkness" appear in pairs in the list, accentuating their similarities and differences, while transitions between categories are observed with sensitivity.

When "dew" is listed in the onomasticon, for example, its placement mirrors the phenomenon itself: it appears on the border between earth and sky, a delicate imprint from one world to the next like the moisture that gathers on grass with the rising sun. Can a list be poetic? Can taxonomies do more than set their subjects in stone, but also enliven our awareness of them? I certainly believe so.

Thousands of years later, in an essay published in 1942, the writer Jorge Luis Borges captured the absurdity and scope of list-making with his own fictional taxonomy, supposedly found in an ancient Chinese encyclopedia titled Celestial Emporium of Benevolent Knowledge. In it, an unknown scribe orders all the animals of the world into fourteen categories. These include “those that belong to the emperor;” “trained ones;” “suckling pigs;” “mermaids;” “those included in this classification;” and, my personal favorite, “those that tremble as if they were mad.” The divisions are precise, elegant, and incongruous.

As the French philosopher Michel Foucault noted, the celestial emporium shows that lists require subtle thought; the ability to segment, categorize, and compare. These characteristics are a little hidden in ancient texts like the Onomasticon of Amenopĕ, but Borges hauls them to their feet and sets them dancing. As Foucault says: “there is nothing more tentative, nothing more empirical (superficially, at least) than the process of establishing an order among things; nothing that demands a sharper eye or a surer, better-articulated language.”

Please visit the site: <https://lithub.com/what-if-listicles-are-actually-an-ancient-form-of-writing-and-narrative/>

TIN FROM ULUBURUN SHIPWRECK SHOWS SMALL-SCALE COMMODITY EXCHANGE FUELED CONTINENTAL TIN SUPPLY ACROSS LATE BRONZE AGE EURASIA

WAYNE POWELL, MICHAEL FRACHETTI, CEMAL PULAK, H. ARTHUR BANKOFF, GOJKO BARJAMOVIC, MICHAEL JOHNSON, RYAN MATHUR, VINCENT C. PIGOTT, MICHAEL PRICE, AND K. ASLIHAN YENER

SCIENCE ADVANCES, 30 Nov 2022, Vol 8, Issue 48

Abstract

This paper provides the first comprehensive sourcing analysis of the tin ingots carried by the well-known Late Bronze Age shipwreck found off the Turkish coast at Uluburun (ca. 1320 BCE). Using lead isotope, trace element, and tin isotope analyses, this study demonstrates that ores from Central Asia (Uzbekistan and Tajikistan) were used to produce one-third of the Uluburun tin ingots. The remaining two-thirds were derived from the Taurus Mountains of Turkey, namely, from stream tin and residual low-grade mineralization remaining after extensive exploitation in the Early Bronze Age.

The results of our metallurgical analysis, along with archaeological and textual data, illustrate that a culturally diverse, multiregional, and multivector system underpinned Eurasian tin exchange during the Late Bronze Age. The demonstrable scale of this connectivity reveals a vast and disparate network that relied as much on the participation of small regional communities as on supposedly hegemonic institutions of large, centralized states.

Please visit the site: <https://www.science.org/doi/10.1126/sciadv.abq3766>> is this article [Go there for full download]

CINNABAR ALTERATION IN ARCHAEOLOGICAL WALL PAINTINGS: AN EXPERIMENTAL AND THEORETICAL APPROACH

Madeleine Kegelmann Neiman, Magdalena Balonis and Ioanna Kakoulli

Appl. Phys. A
DOI 10.1007/s00339-015-9456-x

Abstract

The red mineral pigment known as cinnabar (HgS) was commonly employed in Roman *Fresco* wall paintings. *Fresco* artists of the period favored this pigment for its striking red color. However, upon excavation and exposure to air and light, cinnabar-pigmented surfaces recovered from archaeological contexts often proved to be unstable. Mural paintings colored with cinnabar that have been exposed in the open air frequently demonstrate a disfiguring, irreversible darkening of the surface. Traditionally, scholars have attributed this alteration to a light-induced phase change from red a-cinnabar to black b-cinnabar (meta-cinnabar). While this transformation has not been totally excluded, the prevailing view among conservation scientists is that chlorine plays a key role in the darkening process through the formation of light-sensitive mercury chloride compounds, or as a catalyst in the photochemical redox of Hg(II)S into Hg(0) and S(0). Using laboratory-based experiments and thermodynamic modeling, this paper attempts to further clarify the mechanism(s) and kinetics of cinnabar alteration in *fresco* applications, especially the role of light, humidity, and chlorine ions. Additionally, it explores possible pathways and preventive as well as remedial conservation treatments during or immediately following excavation, to inhibit or retard darkening of cinnabar-pigmented *fresco* surfaces.

EΙΔΗΣΕΙΣ - NEWS RELEASE

IVORY LICE COMB – A DATING HEAD- SCRATCHER – MAY HOLD EARLIEST CANAANITE SENTENCE, BY AMANDA BORSCHEL-DAN

With a paucity of contemporary Bronze Age examples for comparison, scholars believe a 7-word inscription is the first recorded complete proto-Canaanite sentence in Holy Land

The first — and only — early Canaanite sentence was recently deciphered on a Middle Bronze Age ivory lice comb found during a 2016 excavation at Lachish in central Israel. According to epigrapher Dr. Daniel Vainstub, the inscription dates to circa 17th century BCE, which is about four centuries prior to the settlement of the Israelites in the Land of Canaan.

The inscription, “May this tusk root out the lice of the hair and the beard,” is a plea of the most mundane and eternally valid kind. Lice, the Argentine-born Vainstub reminded *The Times of Israel*, is after all the third of the ten plagues of Egypt.

According to Vainstub, “the comb’s inscription is written in the style that characterized the very earliest stage of the alphabet’s development.” Therefore, since the earliest Canaanite inscriptions in Sinai are dated to the 19th century BCE, Vainstub dates the comb to the earliest settlement at Lachish — the 17th century BCE.

The inscription contains 17 tiny, 1-to-3 mm pictographic letters that form seven words. The scribe etched them into the ivory in upside-down rows as he flipped the comb in his hand looking for blank space. The result is quasi-professional, according to Vainstub: The letters become progressively smaller and lower towards the end of the first row. And at the end of the second row, the engraver apparently ran out of space before finishing his word, so he etched a letter below the row.

The quality of its craftsmanship aside, as the article states, the comb’s words “for the first time provide us with a complete reliable sentence in a Canaanite dialect, written in the Canaanite script.”

Ben Gurion University’s Vainstub is the lead author of the article, “A Canaanite’s Wish to Eradicate Lice on an Inscribed Ivory Comb from Lachish,” published in the Hebrew University-affiliated online *Jerusalem Journal of Archaeology*.

This complete — and completely relatable — sentence will cause a ripple effect in the study of proto-Canaanite. It could influence the way scholars understand its grammar, syntax and vocabulary. It may be the only preserved example of the now-extinct Hebrew letter “sin.” It is also likely the earliest record of the word “tusk” until its use in Rabbinic Hebrew two thousand years later.

Even more intriguingly, it points to a much more widespread literacy in the pre-biblical 17th century Canaan than previously thought. If words are etched on an everyday item — albeit from imported, expensive elephant tusk — what else was being written on?

The comb was unearthed at Lachish from a trash pit of jumbled periods, including a number of complete vessels dating to the 7th–6th centuries BCE and earlier artifacts. That Tel Lachish excavation, which ended in 2017, was conducted by a team from the Hebrew University of Jerusalem (HU) and Southern Adventist University in the United States, under the direction of Professors Yosef Garfinkel, Michael Hasel and Martin Klingbeil.

“The comb inscription is direct evidence for the use of the alphabet in daily activities some 3,700 years ago. This is a landmark in the history of the human ability to write,” said excavation director Garfinkel in a press release.

But although the comb is visibly scratched — as one would expect from millennia of subterranean wear and tear — its inscription was initially overlooked and it was set aside, earmarked for inclusion in a study of three additional lice combs discovered at Lachish.

A scientist as well as an archaeologist, Dr. Madeleine Mumcuoglu checked the comb for remains of lice under a Dino-Lite digital microscope and minute residue of head lice was found on the second tooth. She too put it to the side after finding no hope of harvesting ancient lice DNA.

The shallow inscription was only discovered years later in 2021 when Mumcuoglu took out her iPhone to photograph it while finishing up her study. Her “better” camera had been recently stolen, she told The Times of Israel on Tuesday. But when she enhanced the lighting on the tiny 3.5cm x 2.5cm comb to get a good shot with her phone, she noted what appeared to be deliberate etchings of letters.

She immediately sent an image to her friend and colleague Vainstub and asked the epigrapher, “Am I dreaming or do you see letters?”

Vainstub told The Times of Israel that he quickly identified several clear proto-Canaanite letters and asked to examine the comb. He said he made relatively quick work of the inscription following the results of Reflectance Transformation Imaging (RTI) in the Jerusalem labs of the Israel Antiquities Authority as the RTI photographs brought out the unseen grooves of the scribe’s etching.

What was more difficult for the scholar was shoring up his conclusions with parallel examples from contemporary inscriptions. While some dozen inscriptions have been discovered at Lachish, only one — four words incised into a Middle Bronze-era dagger found in a tomb — is likely contemporary to the comb. The most comparable proto-Canaanite inscriptions hail from Serabit el-Khadem in southern Sinai and are dated by squabbling scholars from anywhere from the 19th century BCE to the 13th century BCE.

There are some linguistic discoveries that are found here for the first time in a Canaanite inscription, said Vainstub. “I discovered the letter ‘sin’ — the Canaanites had a special letter for that. Here we have that letter.” (In modern Hebrew it is denoted by a dot on the left side of a letter, versus the right, “shin.”)

The Canaanites' original alphabet was 29 letters, which in time shrank to 22. But in the southern Arabian cultures, the full 29-letter alphabet was preserved until the 7th century CE. The letter “sin,” he said, was preserved in the southern Arabian peninsula, in today's Yemen, through the ancient South Arabian alphabet, which was derived from the Canaanite one.

However, linking a “lost” 17th-century BCE letter to the South Arabian alphabet is not without problems. The most ancient of these inscriptions are dated to the 11th century BCE, said Vainstub, and are very few in number. Many more inscriptions are found there from the 8th century BCE onwards, he said.

Dating dilemma

Prof. Christopher Rollston inspecting the inscribed late 9th or early 8th century BCE altar that was discovered in a Moabite sanctuary at the Khirbat Ataruz site in central Jordan in 2010. (Courtesy)

The research team turned to carbon dating of the ivory for an outside indication of the age of the comb. Twice, samples failed to register and so the epigraphy — the shapes of the letters — is the sole basis for its dating.

The Times of Israel approached three world-renown epigrapher scholars who unanimously supported Vainstub's methodology and scholarship.

“I am certain that there is some room for debating the precise date for this new comb inscription from Lachish, but I would emphasize that this inscription is certainly written in the Canaanite script (i.e., Early Alphabetic script) and that it dates to the earlier period of this script. In other words, this is a very early alphabetic inscription,” said Prof. Christopher A. Rollston of George Washington University, who was also a peer reviewer of the article.

Rollston added: “This Bronze Age inscribed comb joins a chorus of important inscriptions from this crucial ancient site, inscriptions dating to the Bronze and Iron Ages... and these inscriptions from the Bronze and Iron Ages are written in a variety of different languages and scripts. Literarily, this is quite a site!”

French polymath independent epigrapher and historian Dr. Michael Langlois called the new inscription “a missing link in the history of the alphabet.” He added, “It is all the more frustrating that it cannot be precisely dated.”

Langlois elaborated, giving some potential scenarios for its find spot at Lachish.

“Contrary to what we would expect from the archaeological context in which it was found, the inscription does not use the old Hebrew script (also called Palaeo-Hebrew), which was the standard script in the Kingdom of Judah,” he said. “Yet the comb was found in a stratigraphical context that corresponds to the Kingdom of Judah.

There is a sort of anachronism: to our knowledge, the script featured on the comb was no longer in use at the time.

“I can think of several explanations: (1) contrary to our current working hypothesis, this script was still in use half a millennium later than we thought, and cohabited with the old Hebrew script; (2) in the late Kingdom of Judah, someone decided, for whatever reason, to resuscitate or imitate this old script even though it was no longer in use for centuries; (3) the comb is actually much older and was kept for centuries. This is the most probable hypothesis: three other combs were found in Lachish, and all date to the second millennium BCE, which is precisely when the script was in use,” Langlois told The Times of Israel.

Israeli epigrapher, Dr. Haggai Misgav, a lecturer at the Hebrew University, told The Times of Israel that inscriptions in this script are difficult to decipher because there is relatively little information available about them, especially in such an early period when there is great variability in the scribes.

“Daniel Vainstub’s work is thorough and worthy of praise and has yielded an interesting reading... I imagine there will be those who disagree with the identification of certain letters (but not the fact that there are letters). I don’t have a better reading to offer,” Misgav wrote in an email.

The third plague

The inscription is a plea, a wish, or a desire that the small comb be successful in getting rid of the irritating lice. What it is not, interestingly, is a prayer, said Vainstub, although its language echoes that of the biblical Priestly Blessing in structure.

“The ancient world is a believing world, atheism did not exist and people would use their deities whenever possible, but not here. This is an entirely secular inscription. There’s no god here. It’s not a prayer,” said Vainstub.

“Then, and today, for most of our lives we don’t busy ourselves with ideology, but with day-to-day matters, with human existence, and part of the human experience is fighting lice, which was a real plague — the third plague,” laughed Vainstub.

Mumcuoglu asserted that the comb definitely belonged to an important man. Regarding its very small size, she wondered out loud, “I was thinking that even until today, people are ashamed of having lice, which is not reasonable. No one should be ashamed of having lice. We know today that lice prefer clean hair — it is not a sign of poor hygiene, on the contrary. But maybe back then they were ashamed of being infected and if the headlice were pestering their beard, they could take the [tiny] comb out in secret and then hide it in a pocket.”

Rollston was likewise sympathetic to the ancient owner’s plight. “The fact that this inscription is about ordinary life is especially fascinating. Throughout human history, lice have been a perennial problem. And this inscription nicely reveals that even ‘the rich and famous’ in ancient times (or modern times!) are not exempt from such problems. We can only hope that this inscribed comb was useful in doing that which it says it was supposed to do: root out some of these pesky insects,” he wrote.

Langlois, who is easily identified at crowded academic conferences by his flowing locks, echoed his peers’ sentiments and took a slightly more philosophical view: “I find it quite

amusing that such an important inscription... is actually about a very down-to-earth issue which we still face today: getting rid of lice! Even though it is less of a problem today, all of us parents know what a nightmare it can be.

“As a historian, I feel privileged to study ancient people’s daily life. History helps us know who we are as human beings, throughout time and space. And by knowing who we are as human beings, our variables and constants, we can plot our trajectory and make better decisions for our future,” wrote Langlois.

Please visit the site: <https://www.timesofisrael.com/ivory-lice-comb-a-dating-head-scratcher-may-hold-earliest-canaanite-sentence/> [Go there for pix]

ARCHAEOLOGISTS HOPE TUNNEL UNDER EGYPTIAN TEMPLE LEADS TO LONG-LOST TOMB OF CLEOPATRA, BY TOBIAS SIEGAL

Uncovered tunnel, located more than 13 meters underground, has been described by Egyptian authorities as a ‘geometric miracle’

Archeologists in Egypt have uncovered a vast underground tunnel near the city of Alexandria, and hope it may lead them to the long-lost tomb of Egypt’s last pharaoh and possibly its most famous ruler, Queen Cleopatra VII.

Egypt’s Tourism and Antiquities Ministry said the 1.3 kilometer-long (0.8 miles) tunnel was cut into the rock beneath Egypt’s ancient Taposiris Magna Temple.

The tunnel, located more than 13 meters (43 feet) underground, was described by the ministry as a “geometric miracle” that may lead to Cleopatra’s final resting place.

The excavation was conducted by a Dominican-Egyptian archaeological mission from the University of San Domingo.

“This is the perfect place for the tomb of Cleopatra,” Dr. Kathleen Martinez, who headed the joint mission, told Heritage Key.

“If there’s a one percent chance that the last queen of Egypt could be buried there, it is my duty to search for her,” Martinez said.

Cleopatra was the queen of the Ptolemaic Kingdom of Egypt from 51 BC until her death in 30 BC, when Rome took over the land. Her death also marked the end of the Hellenistic period.

The love affairs and power struggles she waged with Roman dictator Julius Caesar and Roman politician Mark Antony are believed to have had a significant impact on the course of Egyptian and Roman history, with the latter immortalized by William Shakespeare in his play “Antony and Cleopatra.”

“This is the first time that any archeologist has found tunnels, passages underground [and] inside the enclosure walls of the temple,” Martinez said, noting that if the find does lead to Cleopatra’s tomb, it would be “the most important discovery of the 21st century.”

Martinez has been working at the Taposiris Magna Temple and actively searching for the lost tomb for over 15 years.

Part of the tunnel was found to be submerged underwater, supporting a leading theory that says that the temple’s foundations are also underwater due to at least 23 earthquakes that hit the area between 320 and 1303 AD.

Martinez's team unearthed several notable artifacts under the temple during their recent mission, including coins bearing the names of Queen Cleopatra and Alexander the Great, as well as ancient statues of the Egyptian goddess Isis.

The alabaster head of a Queen Cleopatra statue, left, a part of a mask believed to belong to Mark Anthony, and coins bearing Cleopatra's image are displayed at the temple of Taposiris Magna, west of Alexandria, Egypt, April 19, 2009. (AP Photo/Amr Nabil)

Previous excavations at the site have also uncovered mummies with golden tongues and a cemetery that contains mummies facing the temple, both signs of a royal tomb being located nearby, according to Martinez.

Egypt's most famous archaeological find to date is considered by many to be the tomb of King Tutankhamun, which was unearthed 100 years ago.

If Cleopatra's tomb is found, that could change.

Please visit the site: <https://www.timesofisrael.com/archeologists-hope-tunnel-under-egyptian-temple-leads-to-long-lost-tomb-of-cleopatra/>

‘EXCEPTIONAL’ TROVE OF 24 ANCIENT STATUES FOUND IMMERSSED IN TUSCAN SPA COLLECTION OF BRONZES DATING BACK 2,300 YEARS SHEDS LIGHT ON TRANSITION BETWEEN ETRUSCANS AND ROMANS, BY ANGELA GIUFFRIDA

An “exceptional” trove of bronze statues preserved for thousands of years by mud and boiling water have been discovered in a network of baths built by the Etruscans in Tuscany.

The 24 partly submerged statues, which date back 2,300 years and have been hailed as the most significant find of their kind in 50 years, include a sleeping ephebe lying next to Hygeia, the goddess of health, with a snake wrapped around her arm.

Archaeologists came across the statues during excavations at the ancient spa in San Casciano dei Bagni, near Siena. The modern-day spa, which contains 42 hot springs, is close to the ancient site and is one of Italy’s most popular spa destinations.

Close to the ephebe (an adolescent male, typically 17-18 years old) and Hygeia was a statue of Apollo and a host of others representing matrons, children and emperors.

Believed to have been built by the Etruscans in the third century BC, the baths, which include fountains and altars, were made more opulent during the Roman period, with emperors including Augustus frequenting the springs for their health and therapeutic benefits.

Alongside the 24 bronze statues, five of which are almost a metre tall, archaeologists found thousands of coins as well as Etruscan and Latin inscriptions. Visitors are said to have thrown coins into the baths as a gesture for good luck for their health.

Massimo Osanna, the director general of museums at the Italian culture ministry, said the relics were the most significant discovery of their kind since two full-size Greek bronzes of naked bearded warriors were found off the Calabrian coast near Riace in 1972. “It is certainly one of the most significant discoveries of bronzes in the history of the ancient Mediterranean,” Osanna told the Italian news agency Ansa.

The excavation project at San Casciano dei Bagni has been led by the archaeologist Jacopo Tabolli since 2019. In August, several artefacts, including fertility statues that were thought to have been used as dedications to the gods, were found at the site. Tabolli, a professor at the University for Foreigners of Siena, described the latest discovery as “absolutely unique”.

The Etruscan civilisation thrived in Italy, mostly in the central regions of Tuscany and Umbria, for 500 years before the arrival of the Roman Republic. The Etruscans had a strong influence on Roman cultural and artistic traditions.

Initial analysis of the 24 statues, believed to have been made by local craftsmen between the second and first centuries BC, as well as countless votive offerings discovered at the site, indicates that the relics perhaps originally belonged to elite Etruscan and Roman families, landowners, local lords and Roman emperors.

Tabolli told Ansa that the hot springs, rich in minerals including calcium and magnesium, remained active until the fifth century, before being closed down, but not destroyed, during Christian times. The pools were sealed with heavy stone pillars while the divine statues were left in the sacred water.

The treasure trove was found after archaeologists removed the covering. “It is the greatest store of statues from ancient Italy and is the only one whose context we can wholly reconstruct,” said Tabolli.

The recently appointed Italian culture minister, Gennaro Sangiuliano, said the “exceptional discovery” confirms once again that “Italy is a country full of huge and unique treasures”.

The relics represent an important testament to the transition between the Etruscan and Roman periods, with the baths being considered a haven of peace.

“Even in historical epochs in which the most awful conflicts were raging outside, inside these pools and on these altars the two worlds, the Etruscan and Roman ones, appear to have coexisted without problems,” said Tabolli.

Excavations at the site will resume next spring, while the winter period will be used to restore and conduct further studies on the relics.

The artefacts will be housed in a 16th-century building recently bought by the culture ministry in the town of San Casciano, near Florence. The site of the ancient baths will also be developed into an archaeological park.

“All of this will be enhanced and harmonised, and could represent a further opportunity for the spiritual growth of our culture, and also of the cultural industry of our country,” said Sangiuliano.

Please visit the site: <https://apple.news/ACveNkAcvTFaHCnqiAhIPXA> [Go there for pix]

SACRIFICIAL MINOAN BULL’S HEAD **UNEARTHED ON CRETE,** **BY STEPHANIE MAKRI**

The elite society in Minoan Crete (3500 BC–1100 BC) evidently believed in complex death rituals and sacrificial ceremonies, particularly when it came to their own burials. That is what experts believe after discovering a sacrificial bull’s head in a Minoan cemetery associated with the palace of Petras. The artefact is of significant importance as it provides a better overview of the equally complex jigsaw of funerary rituals followed in antiquity.

Archaeologist Metaxia Tsipopoulou, who specializes in Minoan civilization, said of finding of evidence of the bull’s sacrifice that it, “may possibly be the oldest ritual (found) in a Minoan tomb that relates to this animal of outstanding importance,” according a report by ANA-MPA.

Tsipopoulou has been excavating at the site of Petras since the 1980s. Consequently, it has formed the cornerstone of her work.

Ancient death rituals in Minoan Crete

The upper classes apparently used the excavated cemetery, which had never been plundered, from 2800 BC to around 1750 BC.

There, Tsipopoulou and her team unearthed bone depositories in 26 different funerary buildings that the elites from that society had used for more than primary burials. Each building contained around 14 rooms. The bull’s head was discovered in Funerary building 9 (1920 BC-1750 BC), and Area 8 in particular.

“There were no other bones of the animal besides the cranium. Obviously the sacrifice took place at another cemetery section,” she mentioned.

Like modern societies, the Minoan elite apparently also believed in keeping death separate from the daily life they were living. Thus, anything used in and for the burials ” would remain in the area (of the ritual), because, as in other societies, whatever was connected to death never returned to the residence complex to be used, but they used to break it and leave it in the cemetery areas.”

For that reason, the artefacts were strewn, albeit meticulously, all over Area 8. The open sky above it provided light. However, they also used lamps to make the space brighter. There, Tsipopoulou identified the six vessels that included two triton shells, the lamp, a censor, a cup, three wide-spout pitchers known as prochooi and the cranium of the bull.

The archaeologist stated the triton shells in particular were significant as they “were very important in Minoan religion... (they) are something sacred, as are bulls.” Only the cranium was located there however, indicating that the sacrifice itself had taken place somewhere else.

The design and date of the pottery reflects the sacrificial placement to approximately 1850 BC. “We don’t know what prompted this elite family to sacrifice an extremely valuable animal,” Tsipopoulou said according to a report by ANA-MPA, “but perhaps it followed a strong earthquake or a pandemic or a dangerous and fatal natural phenomenon like a tsunami.”

Removing it took almost two full months, and later the team then sent it to a laboratory at Oxford University for closer analysis.

Elites dined on sacrificial bull

Researchers at Oxford University also found indications that the deposit took place after the animal was eaten. Its tongue, which was considered a treat, had been removed, and as a result, its lower jaw had broken.

Such a task would have been relatively easy as well, as they suspect the bull was only 5 years old and domesticated. No evidence of human burial was found in Area 8.

At the Petras Minoan cemetery, almost all burials are secondary, meaning that the body remained in one area until the flesh dissolved and the bones were moved, along with valuable objects. These include cylinder seals, stone pottery, gold or silver beads sewn onto garments – to the funerary buildings – art also being a major part of their funerary rituals throughout Ancient Greece.

“Petra never ceases to amaze us,” Tsipopoulou stated.

Please visit the site: <https://greekreporter.com/2022/10/31/minoan-sacrificial-bull-head-unearthed-crete/>

HAND OF IRULEGI: ANCIENT BRONZE ARTEFACT COULD HELP TRACE ORIGINS OF BASQUE LANGUAGE, BY SAM JONES

The Vascones, an iron age tribe from whose language modern Basque is thought to descend, previously viewed as largely illiterate

More than 2,000 years after it was probably hung from the door of a mud-brick house in northern Spain to bring luck, a flat, lifesize bronze hand engraved with dozens of strange symbols could help scholars trace the development of one of the world's most mysterious languages.

Although the piece – known as the Hand of Irulegi – was discovered last year by archaeologists from the Aranzadi Science Society who have been digging near the city of Pamplona since 2017, its importance has only recently become clear.

Experts studying the hand and its inscriptions now believe it to be both the oldest written example of Proto-Basque and a find that “upends” much of what was previously known about the Vascones, a late iron age tribe who inhabited parts of northern Spain before the arrival of the Romans, and whose language is thought to have been an ancestor of modern-day Basque, or euskera.

Until now, scholars had supposed the Vascones had no proper written language – save for words found on coins – and only began writing after the Romans introduced the Latin alphabet. But the five words written in 40 characters identified as Vasconic, suggest otherwise.

The first – and only word – to be identified so far is sorioneku, a forerunner of the modern Basque word zorioneko, meaning good luck or good omen.

Javier Velaza, a professor of Latin philology at the University of Barcelona and one of the experts who deciphered the hand, said the discovery had finally confirmed the existence of a written Vasconic language.

“People spoke the language of the Vascones in the area where the inscriptions were found,” he said.

“We had imagined that to be the case but until now, we had hardly any texts to bear that out. Now we do – and we also know that the Vascones used writing to set down their language ... This inscription is incontrovertible; the first word of the text is patently a word that's found in modern Basque.”

Velaza's colleague Joaquín Gorrochategui, a professor of Indo-European linguistics at the University of the Basque country, said the hand's secrets would change the way scholars looked at the Vascones.

“This piece upends how we’d thought about the Vascones and writing until now,” he said. “We were almost convinced that the ancient Vascones were illiterate and didn’t use writing except when it came to minting coins.”

According to Mattin Aiestaran, the director of the Irulegi dig, the site owes its survival to the fact that the original village was burned and then abandoned during the Sertorian war between two rival Roman factions in the first century BC. The objects they left behind were buried in the ruins of their mud-brick houses.

“That’s a bit of luck for archeologists and it means we have a snapshot of the moment of the attack,” said Aiestaran. “That means we’ve been able to recover a lot of day-to-day material from people’s everyday lives. It’s an exceptional situation and one that has allowed us to find an exceptional piece.”

Despite the excitement surrounding the deciphering of the inscription, Velaza counselled calm study rather than giddy conjecture. After all, he added, the hand hails from one particular moment in time and tells us only that the people in the area then spoke and wrote the Vasconic language.

“That doesn’t mean we know how long they’d been there, nor what their future was after that moment,” he said.

“It’s true that this is an extraordinarily important text but I’d urge a bit of caution about using it to extrapolate too many conclusions about what happened afterwards. But linguistically speaking, it’s going to provide linguists who specialise in the Vasconic language and Proto-Basque with something they haven’t had until now.”

He added: “I think we should be excited – but we should still be very rigorous scientifically speaking.”

Not every recent Basque language discovery has lived up to its billing. Two years ago, a Spanish archaeologist was found guilty of faking finds that included pieces of third-century pottery engraved with one of the first depictions of the crucified Christ, Egyptian hieroglyphics, and Basque words that predated the earliest known written examples of the language by 600 years.

Although the archaeologist, Eliseo Gil, claimed the pieces would “rewrite the history books”, an expert committee examined them and found traces of modern glue as well as references to the 17th-century French philosopher René Descartes.

This article was amended on 16 November 2022 to correct the headline.

Please visit the site: <https://www.theguardian.com/world/2022/nov/15/hand-of-irulegi-ancient-spanish-artefact-rewrites-history-of-basque-language> [Go there for pix]

OLDEST EVIDENCE OF THE CONTROLLED USE OF FIRE TO COOK FOOD, RESEARCHERS REPORT

UniversitySummary: The remains of a huge carp fish mark the earliest signs of cooking by prehistoric human to 780,000 years ago, predating the available data by some 600,000 years, according to researchers

A remarkable scientific discovery has been made by researchers from the Hebrew University of Jerusalem (HU), Tel Aviv University (TAU), and Bar-Ilan University (BIU), in collaboration with the Steinhardt Museum of Natural History, Oranim Academic College, the Israel Oceanographic and Limnological Research (IOLR) institution, the Natural History Museum in London, and the Johannes Gutenberg University in Mainz. A close analysis of the remains of a carp-like fish found at the Gesher Benot Ya'aqov (GBY) archaeological site in Israel shows that the fish were cooked roughly 780,000 years ago.

Cooking is defined as the ability to process food by controlling the temperature at which it is heated and includes a wide range of methods. Until now, the earliest evidence of cooking dates to approximately 170,000 years ago. The question of when early man began using fire to cook food has been the subject of much scientific discussion for over a century. These findings shed new light on the matter and was published in Nature Ecology and Evolution.

The study was led by a team of researchers: Dr. Irit Zohar, a researcher at TAU's Steinhardt Museum of Natural History and curator of the Beit Margolin Biological Collections at Oranim Academic College, and HU Professor Naama Goren-Inbar, director of the excavation site. The research team also included Dr. Marion Prevost at HU's Institute of Archaeology; Prof. Nira Alperson-Afil at BIU's Department for Israel Studies and Archaeology; Dr. Jens Najorka of the Natural History Museum in London; Dr. Guy Sisma-Ventura of the Israel Oceanographic and Limnological Research Institute; Prof. Thomas Tütken of the Johannes Gutenberg University in Mainz and Prof. Israel HersHKovitz at TAU's Faculty of Medicine.

Dr. Zohar and Dr. Prevost: "This study demonstrates the huge importance of fish in the life of prehistoric humans, for their diet and economic stability. Further, by studying the fish remains found at Gesher Benot Ya'aqov we were able to reconstruct, for the first time, the fish population of the ancient Hula Lake and to show that the lake held fish species that became extinct over time. These species included giant barb (carp like fish) that reached up to 2 meters in length. The large quantity of fish remains found at the site proves their frequent consumption by early humans, who developed special cooking techniques. These new findings demonstrate not only the importance of freshwater habitats and the fish they contained for the sustenance of prehistoric man, but also illustrate prehistoric humans' ability to control fire in order to cook food, and their understanding the benefits of cooking fish before eating it."

In the study, the researchers focused on pharyngeal teeth (used to grind up hard food such as shells) belonging to fish from the carp family. These teeth were found in large quantities at different archaeological strata at the site. By studying the structure of the crystals that form the teeth enamel (whose size increases through exposure to heat), the researchers were able to prove that the fish caught at the ancient Hula Lake, adjacent to the site, were exposed to temperatures suitable for cooking, and were not simply burned by a spontaneous fire.

Until now, evidence of the use of fire for cooking had been limited to sites that came into use much later than the GBY site -- by some 600,000 years, and ones most are associated with the emergence of our own species, homo sapiens.

Prof. Goren-Inbar added: "The fact that the cooking of fish is evident over such a long and unbroken period of settlement at the site indicates a continuous tradition of cooking food. This is another in a series of discoveries relating to the high cognitive capabilities of the Acheulian hunter-gatherers who were active in the ancient Hula Valley region. These groups were deeply familiar with their environment and the various resources it offered them. Further, it shows they had extensive knowledge of the life cycles of different plant and animal species. Gaining the skill required to cook food marks a significant evolutionary advance, as it provided an additional means for making optimal use of available food resources. It is even possible that cooking was not limited to fish, but also included various types of animals and plants."

Prof. Hershkovitz and Dr. Zohar note that the transition from eating raw food to eating cooked food had dramatic implications for human development and behavior. Eating cooked food reduces the bodily energy required to break down and digest food, allowing other physical systems to develop. It also leads to changes in the structure of the human jaw and skull. This change freed humans from the daily, intensive work of searching for and digesting raw food, providing them free time in which to develop new social and behavioral systems. Some scientists view eating fish as a milestone in the quantum leap in human cognitive evolution, providing a central catalyst for the development of the human brain. They claim that eating fish is what made us human. Even today, it is widely known that the contents of fish flesh, such as omega-3 fatty acids, zinc, iodine and more, contribute greatly to brain development.

The research team believe that the location of freshwater areas, some of them in areas that have long since dried up and become arid deserts, determined the route of the migration of early man from Africa to the Levant and beyond. Not only did these habitats provide drinking water and attracted animals to the area but catching fish in shallow water is a relatively simple and safe task with a very high nutritional reward.

The team posits that exploiting fish in freshwater habitats was the first step on prehistoric humans' route out of Africa. Early man began to eat fish around 2 million years ago but cooking fish -- as found in this study -- represented a real revolution in the Acheulian diet and is an important foundation for understanding the relationship between man, the environment, climate, and migration when attempting to reconstruct the history of early humans.

It should be noted that evidence of the use of fire at the site -- the oldest such evidence in Eurasia -- was identified first by BIU's Prof. Nira Alperson-Afil. "The use of fire is a

behavior that characterizes the entire continuum of settlement at the site," she explained. "This affected the spatial organization of the site and the activity conducted there, which revolved around fireplaces." Alperson-Afil's research of fire at the site was revolutionary for its time and showed that the use of fire began hundreds of thousands of years before previously thought.

HU's Goren-Inbar added that the archaeological site of GBY documents a continuum of repeated settlement by groups of hunter-gatherers on the shores of the ancient Hula Lake which lasting tens of thousands of years. "These groups made use of the rich array of resources provided by the ancient Hula Valley and left behind a long settlement continuum with over 20 settlement strata," Goren-Inbar explained. The excavations at the site have uncovered the material culture of these ancient hominins, including flint, basalt, and limestone tools, as well as their food sources, which were characterized by a rich diversity of plant species from the lake and its shores (including fruit, nuts, and seeds) and by many species of land mammals, both medium-sized and large.

Dr. Jens Najorka of the Natural History Museum in London explained:

"In this study, we used geochemical methods to identify changes in the size of the tooth enamel crystals, as a result of exposure to different cooking temperatures. When they are burnt by fire, it is easy to identify the dramatic change in the size of the enamel crystals, but it is more difficult to identify the changes caused by cooking at temperatures between 200 and 500 degrees Celsius. The experiments I conducted with Dr. Zohar allowed us to identify the changes caused by cooking at low temperatures. We do not know exactly how the fish were cooked but given the lack of evidence of exposure to high temperatures, it is clear that they were not cooked directly in fire, and were not thrown into a fire as waste or as material for burning."

Dr. Guy Sisma-Ventura of the Israel Oceanographic and Limnological Research Institute and Prof. Thomas Tütken of the Johannes Gutenberg University Mainz were also part of the research group, providing analysis of the isotope composition of oxygen and carbon in the enamel of the fishes' teeth. "This study of isotopes is a real breakthrough, as it allowed us to reconstruct the hydrological conditions in this ancient lake throughout the seasons, and thus to determine that the fish were not a seasonal economic resource but were caught and eaten all year round. Thus, fish provided a constant source of nutrition that reduced the need for seasonal migration."

Journal Reference:

Irit Zohar, Nira Alperson-Afil, Naama Goren-Inbar, Marion Prévost, Thomas Tütken, Guy Sisma-Ventura, Israel Hershkovitz, Jens Najorka.
Evidence for the cooking of fish 780,000 years ago at Gesher Benot Ya'aqov, Israel.
Nature Ecology & Evolution, 2022; DOI:
10.1038/s41559-022-01910-z

Please visit the site: <https://tinyurl.com/2p9bep9z>

PAKISTAN'S LOST CITY OF 40,000 PEOPLE, **BY SAMANTHA SHEA**

In the dusty plains of present-day Sindh in southern Pakistan lie the remains of one of the world's most impressive ancient cities that most people have never heard of.

A slight breeze cut through the balmy heat as I surveyed the ancient city around me. Millions of red bricks formed walkways and wells, with entire neighbourhoods sprawled out in a grid-like fashion. An ancient Buddhist stupa towered over the time-worn streets, with a large communal pool complete with a wide staircase below. Somehow, only a handful of other people were here – I practically had the place all to myself.

I was about an hour outside of the dusty town of Larkana in southern Pakistan at the historical site of Mohenjo-daro. While today only ruins remain, 4,500 years ago this was not only one of the world's earliest cities, but a thriving metropolis featuring highly advanced infrastructures.

Mohenjo-daro – which means "mound of the dead men" in Sindhi – was the largest city of the once-flourishing Indus Valley (also known as Harappan) Civilisation that ruled from north-east Afghanistan to north-west India during the Bronze Age. Believed to have been inhabited by at least 40,000 people, Mohenjo-daro prospered from 2500 to 1700 BCE.

"It was an urban centre that had social, cultural, economic and religious linkages with Mesopotamia and Egypt," explained Irshad Ali Solangi, a local guide who is the third generation of his family to work at Mohenjo-daro.

But compared to the cities of Ancient Egypt and Mesopotamia, which thrived around the same time, few have heard of Mohenjo-daro. By 1700 BCE, it was abandoned, and to this day, no-one is sure exactly why the inhabitants left or where they went.

Archaeologists first came across the ancient city in 1911 after hearing reports of some brickwork in the area. However, the Archaeological Survey of India (ASI) dismissed the bricks as not having any kind of antiquity and the site remained undisturbed for several more years. It wasn't until 1922 that R D Banerji, an ASI officer, believed he saw a buried stupa, a mound-like structure where Buddhists typically meditate. This led to large-scale excavations – most notably by British archaeologist Sir John Marshall – and the eventual naming of Mohenjo-daro as a Unesco World Heritage Site in 1980. The remains they uncovered revealed a level of urbanisation not previously seen in history, with Unesco lauding Mohenjo-daro as the "best preserved" ruin of the Indus Valley.

Perhaps the city's most surprising feature was a sanitation system that was far beyond its contemporaries. While drainage and private toilets were seen in Egypt and Mesopotamia, they were luxuries of the rich. In Mohenjo-daro, concealed toilets and covered drains were everywhere. Since excavations began, more than 700 wells have been recovered, in addition to a system of private baths, including a 12m x 7m "Great Bath" for communal use. Incredibly, toilets were found in many private residences, and waste was covertly disposed of through a sophisticated, city-wide sewage system.

It's a complexity at a level of a city that we would want to live in today

"It's a complexity at a level of a city that we would want to live in today," said Uzma Z Rizvi, an archaeologist and associate professor at Brooklyn's Pratt Institute, who authored the 2011 essay Mohenjo-daro, The Body, and the Domestication of Waste.

The inhabitants of Mohenjo-daro also understood their environment. Since the city was located just west of the Indus River, they built impressive flooding defence platforms and drainage systems to protect themselves from annual floods. Moreover, they were key players in a sea-trade network that extended from Central Asia to the Middle East. For centuries, they produced intricately carved pieces of pottery, jewellery, figurines and other items that ended up everywhere from Mesopotamia to present-day Oman.

Today, the historical site has been turned into a local park, complete with picnic tables and shady, lush gardens. However, travellers from other parts of Pakistan rarely venture to this remote location, and foreign tourism is rare. I meandered about the ancient grid-like streets, taking in the many wells, the high walls that provided much-needed shade, and the covered drains – astounded that this was all engineered many millennia ago.

Mohenjo-daro's ability to master the arts of sanitation and sewage disposal were not the only advanced features that set the inhabitants apart from other early civilisations. Archaeologists have noted the use of standardised building materials, despite a dearth of machines.

"All the bricks have a ratio of 4:2:1, even if they are not of the same shape," Rizvi explained. "It's important to recognise that all these bricks are following a sensibility of sorts. There's a sense of what they want their city to look like. If you make everything to a ratio, even the spaces that you are walking through then inherently follow a certain sensibility of a ratio as well."

The bricks – made from sun-drying and eventually kiln firing – have survived the elements for thousands of years. And while ostentatious architecture such as mansions, temples and other indicators of status are notably absent from Mohenjo-daro's design, Rizvi explained that this does not mean that monumental architecture was non-existent.

"Here the monumentality is really a monumentality of infrastructure," she said.

Crossing a brick-laden sidewalk that led away from the Upper City, I found myself in the Lower Town, which makes up the majority of Mohenjo-daro's 300-plus hectares and housed the city's thriving neighbourhoods. Organisation was the name of the game here. The dozens of relatively narrow streets spread out in a planned grid with perfect 90-degree angles. The doorways of local homes – including those in bathrooms – utilised thresholds not unlike what you'd find in any house or building today.

"When you see a threshold, you know that someone has thought about what it means to be inside and outside," said Rizvi.

At the Mohenjo-daro Museum, a small building set in a grassy area of the complex, I got further insight into these inhabitants. Hundreds of decorative seals – often featuring a

single animal – as well as figurines, jewellery, tools, toys and pieces of pottery have been successfully excavated from the site. Displayed on rows of glass shelves, the relics were remarkably well preserved.

When you see a threshold, you know that someone has thought about what it means to be inside and outside

Among the artefacts were two sculptures: one a young woman wearing jewellery and an intricate hairstyle; and the other a well-groomed man who appeared to be of high status.

"This elite gentleman – we don't know if he was a priest or a king – shows us an attention to detail when it comes to physical adornment and physical care," Rizvi explained. "This gives us insight into how [the inhabitants] were treating themselves, their bodies. Clearly, there is an understanding of mathematics. Clearly, there is an understanding of geometry. Clearly, there is an understanding of fashion."

More than 700 wells have been uncovered since excavations began
(Credit: Nadeem Khawar/Getty Images)

However, a major detail that could unlock far more about the lives and times of the inhabitants remains just out of reach.

While ancient writings often reveal the secrets of civilisations, this has not been the case with Mohenjo-daro, whose inhabitants used what's known as the Indus Valley Script. "It was a pictographic language with more than 400 signs. It is still not decoded," said my guide Solangi.

What exactly happened to Mohenjo-daro is another mystery yet to be solved.

Collectively, researchers are unsure why exactly the city came to be abandoned sometime around 1700 BCE, though it is widely believed that climate factors played a part. Even so, Rizvi explained, the disappearance of Mohenjo-daro was not an instantaneous one.

"The city itself did not suddenly evacuate. Around 1900 BCE, you see a shift happen, fewer traces of people living in the city start to emerge in the material record. It's not that everyone is gone, but there are certain neighbourhoods that you begin to see in disrepair. These later time periods do not have the same density of population as earlier time periods. You see the slow movement of folks leaving the city," she said.

Now, several thousand years later, the city is once again in danger after devastating super floods hit Pakistan in August 2022. Dr Asma Ibrahim, an archaeologist and museologist who's been involved in preservation work all over the country, confirmed that while Mohenjo-daro had been damaged, the flooding to the site was less than archaeologists had originally feared.

Many houses were two storeys high, with thick walls and high ceilings to keep the rooms cool in the hot summer months (Credit: Iqbal Khatri/Getty Images)

When asked about how Mohenjo-daro can be protected going forward, Ibrahim recommended the use of channels to divert excess water away from the site but stressed that "a long-term strategy" is needed.

A lasting plan for the area will not only benefit the archaeological site, but the many locals, like Solangi, who live in its vicinity.

From Solangi's home in Dandh village, the stupa is in clear view. "For me, Mohenjo-daro is a treasure of ancient civilisation. We must protect it for future generations," he emphasised.

As I walked along the pathways, I agreed with Solangi's description. I thought of the orderly streets and perfectly cut bricks. The in-ground pool known as the Great Bath. A wide-spread sanitation system that could outperform some of the infrastructures seen in Pakistan today.

As Solangi astutely said, "Public wealth was spent on public welfare."

And at least for a while, their investment paid off. Mohenjo-daro thrived, and the inhabitants were able to enjoy living standards far beyond the norms of their time.

Sitting in a clanky autorickshaw on the way back to Larkana some hours later, I couldn't help but feel a sense of gratitude. For thousands of years, Mohenjo-daro was buried in dirt and sand, seemingly lost for good in the plains of Interior Sindh.

Yet, thanks to the tireless efforts over the past century of dedicated guides like Solangi and archaeologists, one of the most advanced cities of the ancient world can be walked through once more. And more often than not, you'll get to have the neat, drain-lined streets all to yourself.

Please visit the site: <https://www.bbc.com/travel/article/20221114-pakistans-lost-city-of-40000-people> [Go there for pix]

ARCHAEOLOGISTS DISCOVER **"GEOMETRIC MIRACLE" WHILE** **SEARCHING FOR CLEOPATRA'S TOMB,** **BY ANOUSHKA SHARMA**

The tunnel is about 1,305 metres long, and about 2 metres high.

Archaeologists have discovered a massive, magnificent tunnel that is being dubbed a "geometric miracle" beneath a temple in the ancient city of Taposiris Magna, which is now a ruin on the coast of Egypt.

The Egyptian Ministry of Tourism and Antiquities took to social media to share this news. They informed that the structure was found 13 meters (43 feet) below the surface and was discovered by Kathleen Martinez of the University of Santo Domingo in the Dominican Republic and colleagues during ongoing excavations and exploration of the temple. A remarkable 1,305 meters (4,281 feet) of sandstone had been hacked through to create the 2-meter-tall tunnel.

"Preliminary studies suggest that the architectural design of the discovered tunnel is very similar to that of Greece's Jubilinos Tunnel, but longer, describing it as an geometric miracle," the ministry said in a statement. However, the Taposiris Magna temple's archaeology is complicated since some of it is submerged beneath the Mediterranean Sea and has seen multiple earthquakes over the years.

Dr Mustafa Waziri, Secretary-General of the Supreme Council for Archeology, added that during the excavations and archaeological survey of the tunnel, a part of the tunnel was discovered submerged under the Mediterranean water and a number of pottery vessels and pottery tractors were found under the mud sediment. A rectangular block of limestone and a blind completion was also found there.

According to Live Science, Ms Martinez, who has been working in Taposiris Magna since 2004 in search of the lost tomb of Cleopatra VII, believes that the tunnel could be a promising lead.

In an interview with National Geographic, Ms Martinez expressed her conviction that the tunnel might guide her to the tomb of Cleopatra, the Egyptian queen, and her lover Mark Antony. The Dominican archaeologist acknowledged that the likelihood of this happening is just one percent, but insisted that it would still be "the most important discovery" of the century

Please visit the site: <https://www.ndtv.com/world-news/archaeologists-discover-geometric-miracle-while-searching-for-cleopatra-tomb-3535841> [Go there for pix]

NEW RESEARCH REVEALS OLDEST ANCIENT EGYPTIAN TOMB ORIENTATED TO WINTER SOLSTICE

A team of archaeologists from the University of Malaga (UMA) and the University of Jaen (UJA), have revealed the oldest Ancient Egyptian tomb that is oriented to the winter solstice.

The tomb (designated No. 33) is located in the necropolis of Qubbet el-Hawa, a site on the western bank of the Nile opposite the city of Aswan. Qubbet el-Hawa served as the resting place of ancient nobles and priests from the Old and Middle Kingdoms of Ancient Egypt.

Archaeologists have identified a tomb that was oriented to the sunrise of the winter solstice, bathing the interior in light that was intended to house the statue of a governor from the city of Elephantine. The tomb was first excavated between 2008 and 2018 and is believed to be the burial place for Governor Heqaib-ankh, who lived during the XII Dynasty around 1830 BC.

Studies by UMA using Dialux Evo, software that can reproduce the position of the sun with respect to the horizon in ancient times, suggests that the Egyptians were capable of calculating the position of the sun and the orientation of its rays to design their monuments.

According to a paper published in the scientific journal, Mediterranean Archaeology and Archaeometry, calculating the orientation of the funerary chapel and the location of the statue of the governor was done by using a one metre long two-cubit pole, a square and some robes.

Speaking of the discovery, a researcher from the University of Malaga said: “The tomb perfectly registered the whole solar cycle, related to the idea of rebirth. While the winter solstice meant the beginning of the sunlight victory over darkness, the summer solstice generally coincided with the beginning of the annual flooding of the Nile, hence both events had an important symbolism linked to the resurrection of the deceased governor.

Please visit the site: <https://www.heritagedaily.com/2022/11/new-research-identifies-reveals-oldest-ancient-egyptian-tomb-orientated-to-winter-solstice/145270?amp> [Go there for pix]

GREEK DISCOVERY OF ICELAND **SUPPORTED BY LINGUISTIC EVIDENCE,** **BY PAULA TSONI**

The Greek discovery of Iceland more than one thousand years before the Vikings is supported by new evidence published in The Housman Society Journal.

Based on an essentially linguistic hypothesis of his own inspiration, Dr. Andrew Charles Breeze pens the latest attempt to shed light on the mystery that surrounds the exact location of the legendary Thule — the world’s northernmost land discovered by ancient Greek geographer, astronomer and explorer Pytheas of Massalia, around 300 BC.

The philology professor at the University of Pamplona, Spain, known for his expertise in historical linguistics, appears convinced that the “island with ice floes close to it” which took Pytheas six days to reach by sailing from the north of Britain, can now finally be acknowledged.

“Greeks not only reached India with Alexander, but also discovered Iceland with Pytheas,” he tells Greek Reporter as he relates his theory.

The long-standing debate of the Greek discovery of Iceland

Dr. Breeze compares the old legend of Thule to those of Atlantis or El Dorado.

Pytheas’ original account of his voyages from his hometown of Massalia (today’s Marseille) in southern France, to Britain and beyond, although well known to ancient scholars, is completely lost — most likely during the fires that destroyed the Library of Alexandria in Egypt.

This is why the scientific community has been struggling for centuries to match the northernmost destination of the famous traveler with an exact location, guided by the rare surviving quotations of his work in later writers such as Strabo, Plinius, and Diodorus of Sicily.

“They call this island Thule, and writers like Vergil and Tacitus and Juvenal use Thule rather vaguely, for somewhere at the end of the known world.

“There have been centuries of argument on where Thule was. Most people say Iceland; some, the Faroes; others, Norway, yet others, the Shetland Isles”, Dr. Breeze explains.

He argues, however, that the key to solving the mystery is a linguistic approach to the matter, and contends that the ancient name given to the island by Pytheas suffered scribal corruption through the centuries to the point that it became unintelligible.

“The trouble is that Thule (or Thyle) means nothing. Emend to Greek Thymele, by adding two letters between the two syllables of the word, and it makes sense. Thymele means ‘altar slab; altar’, and is a common word in ancient Greek”, Dr. Breeze points out.

Mystery solved

In his paper, the professor supports the idea that “the term Thymele was suggested by the island’s south coast, with high and level cliffs of volcanic rock, seen as resembling a Greek temple’s thymele or altar; perhaps the one in the temple (excavated after World War II) at Marseille, where Pytheas came from.

“His name Thymele, early on, lost a syllable through scribal error, and by the time of Vergil (d. 19 BC) and Strabo (active after 21 AD) had become Thyle or Thule.”

Did Greek Pytheas made discovery of Iceland?

As he envisages Pytheas on his first sighting of Iceland, Dr. Breeze believes that “when Pytheas and his men saw the great mass of Iceland arising on the horizon, with clouds and mists rising from it, and perhaps columns of smoke and ash from Hekla and other volcanoes, he thought of the altar in a Greek temple, with fire on top and vapors rising from animals sacrificed there.

“The scribes who copied his work then made mistakes. Letters were lost. The meaningless ‘Thule’ was the result.”

The paper adds that the case is strengthened on learning that “ancient altars could be immense. The one at Pergamum was forty feet high; others at Parium (near the Hellespont) and Syracuse were said to be two hundred yards long.”

Dr. Breeze says he has already discussed the paper with other classicists and academics at English universities, who certainly thought the suggestion plausible.

“If the hypothesis is right, after more than twenty centuries the Greeks can be recognized as Iceland’s first discoverers, a thousand years before the Vikings.

“The voyage of Pytheas for six days across the North Atlantic was quite as heroic as anything by Columbus. Greeks can feel proud that it was they, and not the Vikings, who were the first to set foot on the soil of Iceland.” Dr. Breeze concludes.

**Please visit the site: <https://greekreporter.com/2022/11/18/greek-discovery-iceland/>
[Go there for pix]**

‘PUZZLING’ ARCHEOLOGICAL FIND IN SPAIN UNCOVERS OBJECTS WITH EGYPTIAN MOTIFS, BY VICENTE G. OLAYA

Researchers excavating the 2,700-year-old Cerro de San Vicente site unearthed a fragment of a portrait depicting the goddess Hathor, daughter of Ra, god of the sun

About 2,700 years ago, an Iron Age community settled on the Cerro de San Vicente, one of three hills around which the present-day Spanish city of Salamanca is built. For more than three decades, the site has been of major interest to prehistorians and now archeologists have unearthed a surprising new discovery there: a large number of objects, ranging from amulets to painted ceramics, featuring motifs of Egyptian or other eastern Mediterranean origins. The most recent piece exhumed this summer and analyzed under the microscopes of the University of Salamanca is a fragment of an inlay — a piece of faience, or glazed pottery, that ancient Egyptians used as a sort of puzzle piece to depict the faces of their gods — covered in gold leaf. It is the image of the goddess Hathor, daughter of Ra, god of the sun, and mother of Horus, the falcon-headed god.

It is possible that a Phoenician delegation brought these artifacts as gifts or trade items to the residents of what is now Salamanca, in western Spain. But the recent finding raises various unanswered questions. What were these Semitic people doing so far inland? Did the indigenous population of Salamanca adopt the rites and iconography of these eastern Mediterranean cultures?

All the discoveries made at the site on the Cerro de San Vicente are mysterious and surprising. The settlement was a walled village of about 1.3 hectares, sitting on a hill about 30 meters high, next to the Tormes River. Excavations of the site began in 1990, and between two and three meters of archaeological layers have been uncovered and preserved. Researchers have now studied more than one thousand square meters of the site, with 400 square meters protected and on display to the public.

Despite its location in Salamanca’s historic city center, an ideal place for urban expansion, the site has remained protected and in relatively good condition over the decades. In the 19th century, it suffered some collateral destruction at the hands of Napoleon’s troops, who bombarded a nearby medieval convent, and in 1949 a large building (the Colegio Hispanoamericano) was built on the hill’s highest point at what would eventually become the central area of the archeological site. That building was demolished in 2005 to save the site, which is now open to visitors.

Investigations spearheaded by Antonio Blanco and Juan Jesús Padilla, professors of prehistory at the University of Salamanca, and archeologists Carlos Macarro and Cristina Alario, determined that the inhabitants of the hilltop community had, at some point, intentionally set fire to the largest of the houses, with all its objects still inside, between 650 and 575 BC. They then used some of the adobe blocks with which the house was made to seal and cover up the structure.

This circular building — six meters in diameter and known as House 1 — was furnished with two benches and other items of clay furniture and had a capacity for about 20 people. A central fireplace was used to heat the space and inside the house archeologists have uncovered grinding stones, finely painted cookware, instruments for spinning yarn and throwing pottery, as well as exotic objects like beads, faience crockery from the eastern Mediterranean, red engobe pottery, liturgical objects and figurines of apparent Tartessian origin.

“All of these findings indicate that the house was a site of frequent social activity, including banquets and business dealings,” explains Padilla. “The rest of the village featured public squares, granaries, warehouses, large cooking grills, and a rectangular building that resembles a megaron [a kind of temple] with a portico, courtyard and a main hall.”

The curly-haired goddess

Excavations at the site in 2021 uncovered a small blue amulet depicting the Egyptian goddess Hathor but this summer, archeologists discovered a fragment of a spectacular and much larger gold-leaf object, which they believe to be a piece of a portrait of the goddess.

To depict the faces of their deities, Egyptians would trace an outline of the character or animal they wanted to represent on a flat surface such as wood, ivory or bone. Then, they would inlay sections of the drawing until the figure was complete, like piecing together a puzzle.

The recent discovery is a fragment of about five centimeters and reveals the bottom section of the goddess’s hair, with her curls plainly visible. “Each piece was shaped to fit perfectly into its support base,” Padilla says. “Then, with a kind of resin or adhesive, they were glued into place. We are currently analyzing the piece in our laboratory to see if there are any traces of this glue still on the inner surface, to determine what kind of resin was used.”

The gold leaf puzzle-piece was found inside the site’s main rectangular building, a megaron featuring three rooms connected in a line. The piece had been deliberately placed among the adobe blocks and mud grout of the walls, along with other items like a shark’s tooth, faience necklace beads, and a fragment of a clay amphora featuring floral motifs painted in Egyptian blue. Alario says the team is still investigating to better understand the meaning of the motif.

“They’re like little surprises we keep finding as we excavate,” she says. “They might relate to some kind of ritual, but we need to dig deeper to get a better understanding.”

“It’s a very surprising site,” says Macarro. “Why did the inhabitants of an Iron Age settlement have Egyptian artifacts? Did they adopt their rites? I can imagine Phoenicians entering the hilltop settlement carrying these objects, wearing their brightly colored clothing. What would these two peoples have made of each other? It’s very exciting to think about.”

The team of Salamanca archeologists believes that the Phoenicians either arrived via present-day Portugal, following the valleys that lead to Salamanca, or travelled from the

south end of the peninsula through the natural corridor and ancient trade and pilgrimage route known as the Vía de la Plata (The silver route). “As is well known, these trading communities not only settled along the Mediterranean coasts of Iberia, but also along the Atlantic coast,” Alario explains.

“From there, it would not have been too difficult to travel inland towards the interior, and to enter into contact with the groups that lived in what is now the province of Salamanca.”

Alario points out her favorite of all the objects excavated so far: a selection of circular paintings dotted in white and located under one of the benches in House 1. “We’re studying them to try and understand their meaning and what they wanted to express. They could be a simple decorative motif, or a representation of the planet Venus surrounded by stars.” A literal puzzle, and the pieces are starting to fit together.

Please visit the site: <https://english.elpais.com/culture/2022-11-13/puzzling-archeological-find-in-spain-uncovers-objects-with-egyptian-motifs.html> [Go there for pix]

1,800-YEAR-OLD WINE PRESS UNCOVERED NEXT TO ROMAN FORT

A team of Polish-Georgian archaeologists have uncovered a well-preserved wine press near the Roman fort of Gonio in Georgia

Gonio is located in Adjara on the black sea, at the mouth of the Chorokhi river. The fort first appears in text by Pliny the Elder, in the Natural History written in the 1st century AD, and in Appian's Mithridatic Wars from the 2nd century AD.

According to legend, the fort is also the burial place of Saint Matthias, one of the twelve apostles (replacing Judas Iscariot).

The wine press was first identified during a LiDAR survey conducted within and outside the fort's walls. Light Detection and Ranging (LiDAR), is a method of remote sensing using light in the form of a pulsed laser to measure ranges (variable distances) to the Earth. The differences in the laser return times and measuring the wavelengths can be used to compile a 3-D digital map of the landscape.

This survey data revealed anomalies in the terrain, leading to the discovery of a wine press that dates from the 2nd or 3rd century AD.

The researchers believe that the press was part of a farm producing wine for the needs of garrisoned Roman soldiers.

A closer study has revealed that the wine was stored in kvevri, large earthenware vessels used for the fermentation, storage and ageing of traditional Georgian wine. Resembling large, egg-shaped amphorae without handles, they are either buried below ground or set into the floors of large wine cellars.

The process of making wine in Kvevri involves pressing the grapes and then pouring the juice, grape skins, stalks and pips into the Kvevri, which is then sealed. The juice is then left to ferment into wine for at least five to six months before being decanted and bottled.

During this season's excavations, the team has also confirmed assumptions about a building found in 2021, that they believed to be headquarters of the local garrison.

Please visit the site: <https://www.heritagedaily.com/2022/11/1800-year-old-wine-press-uncovered-next-to-roman-fort/145151> [Go there for pix]

ANCIENT EGYPTIANS MAY HAVE USED BRANDING IRONS ON HUMAN SLAVES, BY TOM METCALFE

Small branding irons from ancient Egypt were likely used to mark the skin of human slaves, a new study suggests.

Small branding irons from ancient Egypt were likely used to mark the skin of human slaves, a new study suggests.

Several ancient texts and illustrations, as well as 10 branding irons dating to 3,000 years ago, suggest that ancient Egyptians branded slaves. These branding irons, actually made of bronze, are now in the collections of the British Museum and the Petrie Museum of Egyptian Archaeology at University College London.

The branding irons are thought to date roughly to Egypt's 19th dynasty, from around 1292 B.C. until the 25th dynasty, which ended in 656 B.C., according to a study published Oct. 15 in *The Journal of Egyptian Archaeology* (opens in new tab).

Until now, most Egyptologists had assumed that they were used to brand cattle — a practice seen in ancient Egyptian paintings — or perhaps horses. But the brands in the museums are too small for that purpose, said Ella Karev, an Egyptologist at the University of Chicago and the study's author.

"They are so small that it precludes them from being used on cattle or horses," she told Live Science. "I'm not excluding the possibility, but we have no evidence of small animals like goats being branded, and there is so much other evidence of humans being branded."

Modern cattle-branding guidelines call for a brand that's larger than at least 4 inches (10.6 centimeters) long so the scar it leaves won't become illegible as a calf grows — an issue that the ancient Egyptians likely knew about, too.

But the brands in the British Museum and the Petrie Museum are typically a third of that size — far too small for cattle, Karev wrote. The cattle brands in ancient Egyptian paintings are also square or rectangular, and look larger than the brands in the museums.

Branding people

Some of the ancient Egyptian branding irons are almost exactly the same size as branding irons used by Europeans on African enslaved people during the trans-Atlantic slave trade many centuries later, Karev said. "Human branding-irons from the mid- and late 19th century parallel the size and shape of the smaller branding irons discussed here," she wrote in the study.

Ancient Egyptian writings also talk about "marking" slaves, which was assumed to be a reference to the practice of tattooing, Karev told Live Science. For instance, branding is seen in a depiction of prisoners of war in a carving at Medinet Habu near Luxor in Upper (southern) Egypt dated to the 20th dynasty, perhaps around 1185 B.C.

An Egyptian carving from about 1185 B.C. shows the "marking" of prisoners-of-war, and was thought to depict tattooing. But the new study argues it depicts branding instead. (Image credit: Courtesy Oriental Institute of the University of Chicago)

But research shows that tattooing in ancient Egypt was almost exclusively performed on women and for religious purposes, she said, and the marking of prisoners of war in the Medinet Habu carving is unlikely to be tattooing.

"Practically speaking, 'hand-poking' a tattoo [without a tattoo machine] takes quite a lot of time and skill — and if you're doing that on a large scale, it's not easily replicable," Karev said. "It would make much more sense for this to be branding."

Moreover, the tools used to mark the prisoners in the Medinet Habu carving look different from the cattle brands used in ancient Egyptian paintings. It's been suggested that's because they were needles for tattooing, and that the carving shows them placed in a bowl of pigment. But Karev argues that the depiction instead shows small brands being heated to red hot in a portable heater known as a brazier.

Egyptian slavery

The practice of slavery in Egypt was very different from the modern conception of slavery informed by the trans-Atlantic slave trade, Karev said.

"The way that we define slavery, serfdom, indentured servitude, debt bondage — all of these are modern classifications and categorizations," she said. "The ancient Egyptians did not have these classifications, and so it is up to historians to figure out what, in context, is actually going on."

While ancient writings state that people were sometimes bought and sold as property, and perhaps with the land they subsisted on — what are called "serfs" today — there's also evidence that the dowry for marriage of a slave might be paid by their owner and that many slaves were adopted into families.

In addition, there is evidence that people were often manumitted, or freed from slavery, and became regular members of Egyptian society, she said.

In such cases, the brand of a slave might be a "permanent marker of an impermanent status," Karev said. "They clearly had no issue with an ex-slave adopting a new name, becoming fully Egyptian, marrying an Egyptian free person and moving up the ranks."

Antonio Loprieno, an Egyptologist at the University of Basel in Switzerland who wasn't involved in the study, said the paper was a "fantastic piece of scholarship."

Only foreigners, rather than native Egyptians, seem to have been marked in this way, so "assuming that the branding-bronzes were used for humans ... is empirically more

probable at this time, where the number of foreign workers and soldiers in Egypt was at its peak," he told Live Science in an email.

Loprieno, too, noted that modern ideas of slavery did not apply in Egypt at this time and that further evidence is needed of the "moral connotations" of slavery in ancient Egypt.

Tom Metcalfe is a freelance journalist and regular Live Science contributor who is based in London in the United Kingdom. Tom writes mainly about science, space, archaeology, the Earth and the oceans. He has also written for the BBC, NBC News, National Geographic, Scientific American, Air & Space, and many others.

Please visit the site: <https://www.livescience.com/ancient-egypt-branding-irons-slaves>

DEAD WRONG: VICTORIANS ‘MISTAKEN’ ABOUT WHY EGYPTIANS MUMMIFIED BODIES

Colonial Egyptologists assumed the mummification process was to preserve the body after death. But new evidence asserts it was to steer the body towards divinity Vanessa Thorpe

Egyptian mummies, long an object of modern fascination, seem to link us with the ancient past by preserving distinct human form. But this was not the true reason for the intricate process, a major new British exhibition will argue.

The technique was instead a way of transforming dead dignitaries into a shape that the gods would accept. So, far from ensuring the survival of individual features, mummification aimed to make the occupant of a tomb match a divine formula.

The gilded mummy of a child, at Manchester Museum’s ‘Golden Mummies of Egypt’ exhibition. Photograph: Julia Thorne

“The idea that we inherited from the Victorians, that it was all done to keep a dead body just as it was in life, is not right,” said Campbell Price, a leading Egyptologist whose book will accompany the exhibition. “It is flawed, and we now believe it was intended to steer them towards divinity.”

Price and a team of curators will invite the public to examine the evidence themselves in the new year when Golden Mummies of Egypt comes to the newly refurbished Manchester Museum, which is reopening on 18 February.

The display, which will feature eight mummies and more than 100 other ancient objects, has already toured internationally during the museum’s closure and will be freshly staged for Manchester, to emphasise Price’s interpretation of the ancient purification, anointing and wrapping process.

“We have to imagine a time when, not only were there obviously no photographic images, but also very few mirrors, so people didn’t know what they looked like. The whole question of individual facial features was not so important,” said Price this weekend. “The ideas behind ancient portraiture and statuary were also very different as a result.”

The strength of the mistaken belief that Price now hopes to turn on its golden head is, he says, down to the colonial attitudes of early archaeologists, supported today by our heightened interest in personal appearance. “When people look at a face inside a mummy and say, ‘oh, they looked just like us’, it is just an illusion,” he said.

Price is an active member of the Egypt Exploration Society, which, though founded in 1882, now challenges the old colonial, celebratory approach. More up-to-date scholarly

interpretations stem in part, Price said, from the work of Christina Riggs, whose book *Treasured:*

How Tutankhamun Shaped a Century was published in paperback this month to coincide with the centenary of the discovery of the tomb of the best known pharaoh of them all.

In recognition of the spiritual significance of the mummies and other tomb contents, no CT scans nor facial recognition imagery will appear in the exhibition.

“All the more recent scanning harks back to the Edwardian archaeologist Flinders Petrie, who was interested in measuring the skulls inside the mummies to see if they matched British ideas of what a human should be. It is the rather sinister background to Egyptology we are moving away from.”

Displayed diary entries from eminent archaeologists of the past will also serve to reveal how priorities were once driven by Victorian values concerning race, gender, status and death.

Please visit the site: <https://www.theguardian.com/science/2022/nov/12/victorians-wrong-about-why-egyptians-mummified-the-dead-exhibition-reveals>

CLIMATE CHANGE AND HUMAN ACTIVITY **ERODE EGYPT’S TREASURED** **ANTIQUITIES, BY VIVIAN YEE**

The effects of global warming on the country’s monuments are already striking. And the changing weather is only amplifying centuries of destructive human impact.

When Howard Carter discovered Tutankhamun’s glittering tomb in Egypt’s Valley of the Kings 100 years ago, he was living in a mud-brick house surrounded by desert so dry it had preserved the tombs, mummies and towering temples for more than 3,000 years.

In the century that followed, Mr. Carter’s house was turned into a museum with a green, palmy garden, thanks to water brought in from the Nile. The river’s annual floods were stilled by the construction in 1970 of Egypt’s Aswan High Dam, upstream and to the south of Luxor, allowing more frequent planting. More and more, farmers used the Nile’s water to inundate the expanding fields of alfalfa, sugar cane and vegetables that fed the country’s soaring population.

All of that water seeped into the stone foundations of Luxor’s epic temples and the mud brick of Carter House, mixing with salt in the soil and on the stones as they drew the water up like straws.

Sandstone turned to sand and limestone cracked, crumbling the very old and the not very old at all alike.

Carter House reopened last week, protected from its own water-hungry garden by a new circle of desert, after a two-year restoration that stabilized the foundations and supplied the interior with Carter-era furniture and artwork. The famed temples of Karnak and Medinet Habu are now guarded by giant pumps that suck groundwater away.

But the danger is coming from above as well as below: Local residents and archaeologists say rainstorms have arrived with increasing frequency as the climate changes, corroding the stones and washing ancient color from the carvings. Some temple stones have cracked in two; moisture has reduced chunks of others to little more than powdery ochre sand; and still others are eaten away entirely.

“Maybe people here don’t go to school, but they know that if we treat the earth badly, the bad will come back,” said Abdu Ghaba, 42, who grew up in New Gurna, across the Nile from Luxor.

As the annual United Nations climate summit got underway this past week at the Egyptian Red Sea resort of Sharm el Sheikh, its host was in deep trouble.

Egypt is warming almost twice as fast as the rest of the world, and the Nile, the country’s main source of water, is drying up. Rising seawater is killing crops in Egypt’s breadbasket, the fertile Delta region north of Cairo where the Nile flows into the Mediterranean. The ancient city of Alexandria, on Egypt’s northern Mediterranean coast, stands to drown.

The effects of global warming on Egypt's celebrated antiquities are already striking.

In Luxor, the changing weather is amplifying the destructive impacts of human developments around the monuments over the centuries. The tombs in the Valley of the Kings will be “gone completely” within a century if they are not protected from mass tourism or other man-made stressors, the country's most famous Egyptologist and a former antiquities minister, Zahi Hawass, has warned.

Archaeologists say some of Egypt's monuments are already visibly damaged, and others, like the 15th-century Citadel of Qaitbay in Alexandria, are under threat from rising seas.

In the southern city of Aswan, temperatures that often surpass 100 degrees Fahrenheit have strained ancient granite monuments. Expanding under the hot sun and cooling in the night air, the granite eventually cracks, erasing inscriptions in the process.

Mr. Ghaba recalled that when the first strong rainstorm in his lifetime terrified Luxor in the 1990s, older villagers were convinced that the sky was crying from the pollution of nearby factories, avenging itself on the humans below.

He now works for an organization dedicated to documenting the ancient tombs in the Valley of the Kings in infinitesimal detail using sophisticated 3-D scanners.

“I want the tombs and the temples to stay alive — to preserve them,” he said. “We have to create something for the future to protect them.”

Long preserved by dry air and low population density, the slow-burning deterioration of Egypt's antiquities hastened under Muhammad Ali Pasha, Egypt's ruler in the first half of the 1800s. The onset of modernity at that time brought more people, more agriculture — which required more water — and more industrial activity to Luxor.

Egyptian authorities and foreign archaeologists thought they were doing the Karnak temples a favor in the 1870s by hauling away centuries' worth of debris that had accumulated there. For future tourists, they were: The excavation revealed the legs of great statues and the bases of towering columns.

Until the High Dam held back the annual Nile floods, however, the digging also allowed salt- and mineral-rich floodwater to run down into the temple complex every year for a century, eroding the stones. Only the pumps installed in 2006 stopped further damage.

Agricultural irrigation and drainage systems for villages near the great pyramids of Giza caused the groundwater there to rise, as well, requiring similar pumps to rescue the Sphinx from groundwater that had puddled near its paws.

Karnak's main problem is its geriatric age. “It's in danger because it's old,” said Luc Gabolde, who co-directs the French-Egyptian Center for the Study of the Temples of Karnak.

The rain, though still rare, poses an increasing threat.

Mr. Gabolde's team is working to preserve broken-off stone fragments by reassembling them, jigsaw-style, in structures of lime and sand, protecting them on four sides from rain and showing visitors how they were originally placed. That still leaves them vulnerable to moisture on two sides, and funding and time constraints mean many fragments remain in the open, with other parts of the temple threatening to crumble.

Across the Nile at Medinet Habu — a mortuary temple for the pharaoh Ramses III built around an even older temple to Amun-Ra, the ancient Egyptian sun god — a team of American archaeologists and mostly Egyptian stonemasons have been countering water damage since the 1990s.

“Water and salt are the enemy for these monuments,” said Brett McClain, a senior epigrapher at the Epigraphic Survey of the Oriental Institute at the University of Chicago, which has been documenting the inscriptions at Medinet Habu for nearly a century. “These monuments survived because they were dry.”

One of the survey's first projects was to rebuild an archway near the entrance, the Domitian Gate, that had threatened to tumble from its unstable foundation. Newly hewed stone blocks quarried from near the ancient Egyptians' Nile-side quarry at Gebel el-Silsila now intermingle with the old. A few paces away, a second gate has been disassembled, awaiting a similar resurrection.

American-funded pumps installed in 2009 from Medinet Habu to the temple of Seti I prevent groundwater from further rotting the foundations. Still, the archaeologists estimate they have decades of conservation to do on the pre-2009 damage.

And the downpours keep coming, a couple of them a year now where there used to be none, adding moisture that the pumps cannot suck away.

Humans unintentionally caused another noticeable change in recent years: Pigeons have come to roost all over Medinet Habu, streaking the walls with their acidic droppings, which damage the stone.

The birds arrived there after Egypt's government, hoping to better protect the monuments, forced villagers out of a nearby settlement where they had lived for many years among a set of tombs. The villagers did not want to go. The pigeons they had raised for food stayed close, moving into the temple.

But the most obvious human impact on Luxor's monuments is the sheer number of people who visit them. Before the coronavirus pandemic began in 2020, thousands of tourists passed through King Tut's tomb daily.

Trying to balance tourism with preservation, the government commissioned the Getty Conservation Institute to install a ventilation system to mitigate humidity bred by human sweat and breathing, among other fixes. The project opened in 2019.

Another approach, advanced by the Madrid-based Factum Foundation, is to create realistic replicas that tourists can visit instead of the tombs — a model pioneered in France, where a full-scale replica of the Lascaux Cave and its prehistoric drawings has replaced the sealed-off original as a tourist destination.

A lifelike re-creation of King Tut’s tomb has been open to Carter House visitors since 2014 and the foundation hopes to scan more tombs.

“If anything crazy happens in the world,” said Aliaa Ismail, 31, the project’s manager, “we’re making a record because we don’t want it to be lost forever.”

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Please visit the site: <https://tinyurl.com/muedk6bm> [Go there for pix]



ROMAN SHIP DISCOVERED OFF THE COAST OF CROATIA

2,000-year-old Roman ship discovered by underwater archaeologists Five feet under the sea surface, divers were able to uncover an ancient unspoiled structure.

More than 2,000 years after sinking, a Roman ship has been found off the coast of Croatia. The vessel was found two meters deep, covered in the sand near the vacation town of Sukošan.

Archaeologists in the Zadar River region say the ship dates back to the first century. The ship itself was around three meters wide with more of its depth still being discovered. It had suffered some shipworms, a marine-based mollusk that breaks through wooden surfaces.

This archaeological discovery, made by the International Centre for Underwater Archaeology, was part of the group's work alongside the German Archaeological Institute and other global leaders in the industry.

When does this ship date back to?

This discovery has taken time to receive an accurate identification. Undersea archaeologists identified pieces of wood and coins dating back to the reign of Emperor Constantine.

This was no small discovery. After finding these pieces under the sea, specialists launched a full underwater survey, uncovering secrets from the ancient Roman port city of Barbir. New information about the ancient Roman society can now be uncovered that we did not know we were missing.

The ship is believed to have been built around the same time as the port of Barbir.

The large majority of the ship's outer frame has remained intact aside from shipworm damage, so shipbuilders from that period can rest easy knowing their work has remained sturdy enough to last the test of time.

Archaeologists made this vital discovery after six years of exploring the ground below the surface of the Zadar River.

Some bits of the ship were sent off to a lab in France for testing, which will helpfully assist experts in answering some longstanding questions on the ancient world.

Until archaeologists are ready to further diver into their discovery, the vessel will be preserved under layers of sand and even stone. Preservation efforts are expected to last through the year. The team plans to return in 2023 to fully expose the rest of the seafaring vehicle.

This discovery uncovered new information about ancient trade routes more than two thousand years later. Traders with these ships were expected to have traveled as far as North Africa from modern-day Greece, Turkey, and Italy.

Scuba diving archaeologists found this ancient vessel nearly five feet deep under the seabed surface. Hopefully, this full-submersion won't prove to be too difficult in the future for uncovering even more of this ancient means of transportation.

Please visit the site: <https://www.jpost.com/archaeology/article-722150> [Go there for pix]

A ROMAN EMPEROR’S VILLA IS NOW PRODUCING OLIVE OIL, BY VITTORIA TRAVERSO

Hadrian’s estate has trees found nowhere else on Earth.

When French writer Marguerite Yourcenar first visited Hadrian’s Villa in Tivoli, Italy, she was mesmerized by what she defined as its “wild and free ruins.” A black and white photo from 1924 shows the 21-year-old writer standing by crumbled walls against a background of cypresses and olive trees.

During that trip, Yourcenar jotted down some notes that, decades later, would be turned into her masterpiece, *Memoirs of Hadrian*, a fictional account of Emperor Hadrian’s life based on both her imagination and historical documents.

“Last night at the Villa I thought of the thousand silent existences that have lived here between the time of Hadrian and us,” she wrote during her visit, referencing not only the human, but also the animal and plant life that inhabited the villa in the 2,000 years since its founding.

Appreciation of Villa Adriana and all its historical residents has only grown since. In fact, the 250-acre archeological complex located in Tivoli, 20 miles outside of Rome, has inspired an unlikely collaboration between art historians and farmers.

Today, Hadrian’s Villa produces around 1,500 liters of olive oil yearly, made from olives harvested from the 3,000 olive trees in the villa gardens. “Because of their age and the way they have become part of the landscape, the olive trees of Hadrian Villa can be thought of as a green monument,” wrote David Granieri, president of the local chapter of Coldiretti, Italy’s farmers association, in a press release.

To preserve the villa’s unique botanical heritage, Coldiretti, together with Italy’s olive farmers association, reached out to Hadrian Villa’s curators to propose the olive oil venture back in 2018. These days, harvesters take the fruits from Hadrian’s Villa to an olive crusher in the nearby town of Palombara Sabina, where they are turned into golden oil. Recently, *Olea Hadriani* (Hadrian’s oil, in Latin) was officially recognized as a product of Rome, according to the European Union’s Protected Geographical Indication (PGI) classification.

Emperor Hadrian, known as *omnium curiositatum explorator*, an explorer of all curiosities, built the Tivoli estate between 117 and 138. Its buildings combined elements of Egyptian, Greek, and Roman architecture that he witnessed during his extensive travels across the Roman empire. Famous features include the Maritime Theater, a circular structure surrounded by water where Hadrian spent time reflecting and meditating, and the Canopus, a statue-lined oval pool representing the river Nile. Hadrian included gardens, farmed areas, and patches of wilderness into the estate’s design.

After his death, the villa passed into different hands until it was abandoned by the 6th century. For nearly a millennium, the complex was used for radically different purposes than the one intended by its founder. Foreign troops used part of the estate as their headquarters, local farmers used the land to grow crops, and builders would notoriously steal marble and other stones needed for new buildings in the area.

It was only in the 15th century that the estate was “rediscovered” and treated as a monument. Throughout the centuries, olive trees were silent witnesses to the villa’s highs and lows.

“We know from visitors’ notes that there were olive trees in the area for centuries,” says Andrea Bruciati, an art historian and director of Hadrian Villa archeological complex, adding that the majority of olive trees used for current production are only a few hundred years old. As many as seven different cultivars of olive trees grow on the estate, including one totally unique variety called *Albero Bello*, or the beautiful tree. Dating to the 13th century, the tree stands 52 feet tall. Last month, the villa produced special olive oil made only from the olives of this nearly thousand-year-old giant.

Putting the olive grove back in production, Bruciati says, allows for an active preservation of the villa’s botanical heritage and highlights the surrounding landscape, as Tivoli has been known for its olive oil farming through the ages. “We want to preserve the olive trees not just for their aesthetic value but for their actual productive value,” he notes.

For now, *Olea Hadriana* is not available to the public. Its production is intended only for visitors to the villa to taste. In the fall, guests can witness the olive harvest, while school groups attend open-air lessons about olive oil production. Such gastronomical events, Bruciati explains, allow for a different kind of experience on the land on which the archeological complex stands. “I have always thought of Hadrian Villa not just as an archeological entity, but as a place where visitors can engage in slow and thoughtful exploration,” he says.

Please visit the site: <https://www.atlasobscura.com/articles/emperor-hadrian-villa>

MAN REPATRIATES 19 ANTIQUITIES AFTER READING GUARDIAN ARTICLE, BY DALYA ALBERGE

An American man has returned 19 antiquities to the four countries they came from after reading reports in the Guardian about the repatriation of looted antiquities.

John Gomperts, who lives in Washington, realised that the ancient pieces worth up to £80,000 – including two seventh- and eighth-century BC Cypriot vases – that he had inherited from his grandmother could have come from illicit excavations because they have no collecting history.

He wanted to do the right thing legally and ethically by returning the items to Italy, Greece, Cyprus and Pakistan respectively. After an agreement with his two siblings, he has returned them.

He said: “It seemed like the right thing to do ... I read stories on repatriation and I thought: we have these pieces that are 2,500 years old from other countries; we should explore whether we can give them back.”

But with no idea how to repatriate antiquities, he was initially worried that he could be in trouble with the authorities for having potentially looted the artefacts in his possession.

In those Guardian reports, he noticed that Prof Christos Tsirogiannis, a former senior field archaeologist at the University of Cambridge and a specialist in antiquities and trafficking networks, had been quoted, and so he reached out to him for advice.

Based in Cambridge, Tsirogiannis is the head of illicit antiquities trafficking research for the Unesco Chair on Threats to Cultural Heritage at the Ionian University in Corfu, Greece. Over 15 years, he has identified more than 1,600 looted artefacts within auction houses, commercial galleries, private collections and museums, alerting police authorities and governments and playing a significant role in repatriating antiquities.

They include an ancient Greek bronze horse, which Sotheby’s in New York was due to sell in 2018 until Tsirogiannis notified the authorities of its links to a disgraced British antiquities dealer. In 2020, Sotheby’s lost its legal challenge and Greece’s culture minister hailed the court’s ruling as a significant victory for countries fighting to reclaim antiquities.

Tsirogiannis said Gomperts was setting an extraordinary example. “He reached out to me, which is a first for an owner of unprovenanced antiquities, asking for advice to do the right thing,” he said. “It’s a wonderful case of a person who did so because he had read the Guardian articles. It shows how such publications are raising awareness and bringing actual results. He sent me photos of the antiquities, which were clearly authentic.”

He identified each antiquity, indicating the country to which it should be returned. “Twelve objects belong to Greece, four to Italy, one to Pakistan, and two to Cyprus. I advised him to give them back,” he said.

“I told him: ‘If you follow my advice then you will have no problems and also become an example for other people to follow. You wrap them in a box for each country and go to their embassies. Please use my name – this will protect you. The most honest way is the straightforward way.’”

The items included two fourth-century BC ceramic plates decorated with acrobats by south Italian painters – an “unusual subject”, he said – a lebes gamikos, a fourth-century BC vase used in ancient Greek marriage ceremonies, and a stone relief fragment showing the followers of Buddha, carved in the second or third century BC.

Gomperts is an adviser to non-profit organisations. His German-Dutch grandmother Gisela Schneider-Herrmann died in 1992, aged 98. She was active in various excavations, particularly in Italy and Greece in the 1950s and 1960s, and published scholarly papers.

Her grandson said: “I have no idea how she actually acquired these objects. She was a prim and proper person. But there were different norms of the day. These objects were her obsession, her entire existence.”

A couple of the objects came with receipts, but Tsirogiannis realised their links to known Greek dealers of illicit antiquities in the 1950s and 1960s. “So this alerted me even more for him to repatriate them immediately,” he said.

Gomperts said: “I knocked on embassy doors and said ‘I have a delivery’. I said: ‘I want to repatriate these things.’”

The countries showed their appreciation, with notes of thanks to Gomperts and Tsirogiannis.

Tsirogiannis said: “This case will show others who want to do something that they can be protected when doing the right thing.”

This article was amended on 11 November 2022. References to the second, third, fourth, seventh and eight centuries are all BC; a previous version omitted this information due to changes made during editing.

Please visit the site: <https://www.theguardian.com/culture/2022/nov/11/man-repatriates-19-antiquities-after-reading-guardian-article> [Go there for pix]

ANCIENT GREEK CITY RUINS RESURFACE IN TURKEY, BY ALEXANDER GALE

The ruins of an ancient Greek city in Asia Minor have become visible for the first time in three decades due to a drought that has caused the water of the Bayramiç Dam to recede.

The ruins belong to Skepsis, an ancient city inhabited by the Greeks and Romans. Archaeologists believe it was first settled in the 6th century BC.

Skepsis was one of many ancient Greek cities (Greek: poleis) in Asia Minor—or what is now modern-day Turkey.

The archaeological site

“The remains of the city that we know as the Ancient City of Skepsis in Bayramiç came to light when the waters of the Bayramiç Dam receded,” said Dr. Oğuz Koçyiğit of the ÇOMÜ Art History Department.

The water recession revealed the ruins of an ancient church and bathhouse that are approximately 1,500 years old. The structures were built during the Roman-Byzantine period, but the city itself dates back to Classical Greek civilization.

“The bath structure is one of the rare structures we know especially in the Byzantine period and is important because of its decorative features, Koçyiğit said. “It gives us information about the architecture, construction techniques, baths and bathing traditions of the period. In this sense, it is important for us that these ruins have come to the surface.”

This is not the first time that the ruins of the ancient city have been examined. Archaeologists Heinrich Schliemann and Frank Calvert also excavated the area in the 19th century. Schliemann and Calvert are famed for their digs at Hisarlik, now believed to be the site of Ilion (Troy).

The ancient Greek city was more recently excavated in the 1990s, but rising waters submerged the ruins. A recent drought in Turkey has exposed them once again.

“Following the rescue excavations carried out here in 1993 and 1995, the bath and church structure were unearthed, documented and surveyed,” Koçyiğit reported. “But unfortunately, the structures were submerged. It is exciting for us to see these structures resurface after 30 years when the waters receded.”

Famous inhabitants of the ancient city

Several notable people hailed from Skepsis. For example, Demetrius of Skepsis was a grammarian who was well-known in the first half of the second century BC for his historical and geographical commentary on the Iliad.

Another inhabitant of the ancient city was Metrodorus. Metrodorus was a philosopher, politician, and teacher of rhetoric. The Greek geographer Strabo commented that Metrodorus was well-known for his written works, which used a "brand-new style and dazzled many."

Of Metrodorus, Strabo further said that he married a wealthy woman from the Greek polis of Chalcedon. He then came into the service of the Pontic king Mithridates Eupator. However, according to Plutarch, during an embassy to Tigranes the Armenian, Metrodorus fell out of favor with Mithridates and was put to death.

For a time, the written works of Aristotle and Theophrastus were stored in a cellar in Skepsis. Neleus, who was a pupil of Aristotle and a friend of Theophrastus, hid their works to avoid their being taken by Attalus I for his new library in Pergamon.

Please visit the site: <https://greekreporter.com/2022/11/28/ancient-greek-city-ruins-resurface-asia-minor-turkey/>
