6th INTERNATIONAL MARITIME ARCHAEOLOGY GRADUATE SYMPOSIUM (MAGS 2025)

BOOK OF ABSTRACTS – ORAL PRESENTATIONS

University of Ioannina, Greece. International Centre of Hellenic Education "STAVROS NIARCHOS", "Dimitrios Glaros" amphitheatre - April 2-5, 2025

ORAL PRESENTATION PROPOSALS

1) **NAME:** GEORGIOS APEITOS **EMAIL:** georgios.apeitos@arch.ox.ac.uk **AFFILIATION:** UNIVERSITY OF OXFORD

TITLE: ***Names of Athenian Triremes: Investigating Group Cohesiveness and Social Identity in the Athenian navy of the 4th century BC***

KEYWORDS: Ship-names, Epigraphy, Psychology, War

ABSTRACT:

Names of warships is a topic that has surprisingly interested a limited number of researchers. The set of inscriptions known as the Naval Inventories of Athens (IG II2 1604 - IG II2 1632) provides a wealth of information regarding the state of the Athenian navy in the 4th century BC. The inscriptions include the names of the triremes, of which 279 unique cases are preserved. This paper was developed around two questions: What kinds of names did Athenians choose for their warships? And is naming triremes a practice that goes beyond the practicality of keeping track of each ship?

The paper first explains how warships can serve as objects which lay the theoretical framework for studying ship nomenclature. The names are presented in separated categories, and theories of psychology and sociology are introduced, which helps to explain why naming warships is a tactic to enhance group cohesiveness. Sailors identify with the virtues and qualities of the 'personified' ship, subconsciously developing their sense of belonging, improving their morale, confidence, and presumably overall performance, while fighting the world's toughest frontier.

This research lays the theoretical and practical foundation on which further research on ship names can be conducted, especially in the Eastern Mediterranean where names of ships are preserved. One example of such a case is 18th Dynasty Egypt (1541-1322 BC).

2) **NAME:** IOANNIS NAKAS **EMAIL:** jnak77@yahoo.com **AFFILIATION:** UNIVERSITY OF HAIFA

TITLE: ***The Maritime Cultural Landscape of Nicopolis***

KEYWORDS: Nicopolis, Harbours, Epirus, Roman

ABSTRACT:

Nicopolis, founded by Octavian after his victory against Antonius and Cleopatra in Actium in 31 BCE, was, for the entire Roman and Early Byzantine period, the most important and, most likely, largest city of Epirus. The city was not only a well-planned and monumental urban space, but also a commercial centre, situated between the Ionian coast and the Ambracian gulf and on the main routes leading from Italy to the East and from the Adriatic to the South. It was served by three harbours, each of different form and function: the open Komarus harbour on the Ionian Sea, and the two enclosed harbours of Vathy and Mazoma on the coasts of the Ambracian Gulf. Despite the recent large-scale excavations and studies concerning the ancient city, little work has been done concerning its harbours. This paper approaches the maritime cultural landscape of the ancient city by combining and scrutinising archaeological, historical, and geophysical data in order to help the understanding of the role these harbours played in the development of the city and the practical aspects of navigation and ship handling related with them.

3) **NAME:** MOHAMED W. FAREED. **EMAIL:** mw.fareed@gmail.com **AFFILIATION:** UNIVERSITY OF SHARJAH

TITLE: ***Navigating Heritage: Creating a Global Digital Directory of Submerged Cultural Landscapes***

KEYWORDS: Submerged Cultural Landscapes, Digital Preservation, Maritime Archaeology, Geographic Information Systems (GIS)

ABSTRACT:

The preservation of submerged cultural landscapes presents unique challenges and opportunities in maritime archaeology. As these sites are often inaccessible and vulnerable to natural and human-induced threats, creating a comprehensive digital directory becomes essential for their protection, study, and public engagement. This paper proposes the development of a Global Digital Directory of Submerged Cultural Landscapes, aiming to integrate interdisciplinary methodologies and cutting-edge digital tools to map, document, and share information about these underwater heritage sites.

Focusing on the eastern Mediterranean region, where maritime history is rich and diverse, this project will compile existing data and incorporate new findings through collaborative efforts with archaeologists, historians, and marine scientists. The directory will serve as an open-access platform, allowing scholars, educators, and the public to explore and contribute to the knowledge of submerged cultural landscapes. By leveraging technologies such as Geographic Information Systems (GIS), 3D modelling, and digital storytelling, the platform will not only preserve these sites but also make them accessible to a global audience, fostering greater appreciation and understanding of our shared maritime heritage.

The initiative aligns with the broader goals of the 6th Maritime Archaeology Graduate Symposium (MAGS 2025), which seeks to enhance interdisciplinary collaboration and promote innovative approaches in maritime archaeology. This project, through its focus on digital preservation and accessibility, aspires to set a precedent for future research and conservation efforts in the field, ensuring that submerged cultural landscapes are safeguarded for generations to come.

4) **NAME:** MERNA AHMED ELSAYED MOHAMED DARWISH. **EMAIL:** mernaahmed131@gmail.com **AFFILIATION:** ALEXANDRIA CENTRE FOR MARITIME ARCHAEOLOGY AND UNDERWATER CULTURAL HERITAGE, FACULTY OF ARTS, ALEXANDRIA UNIVERSITY

TITLE: ***Examining the Formation Processes of Maritime Archaeological Sites in Egypt***

KEYWORDS: Maritime Archaeology, Formation Processes, Natural Factors, Cultural Factors

ABSTRACT:

Archaeological site formation processes refer to the series of natural and cultural actions contributing to an archaeological site's creation, alteration, and preservation. To understand the formation processes of maritime archaeological sites, it is necessary to study how they came to be. These processes vary from one site to another according to the surrounding environment, so not all maritime archaeological sites are similar. The question is how the formation of each site differs depending on its environment, whether it is a terrestrial, coastal, or submerged site. Studying how an archaeological site was formed helps us understand its history, learn about its past, know what led to its current state and determine how to preserve it for the future.

This study analyses the factors that influence the formation of maritime archaeological sites in Egypt. It focuses on sites such as the Sadana shipwreck, the submerged city of Thonis Heracleion, and the

port of Myos Hormos. The study also compares the formation processes of these sites with the formation processes of Marsa Bagoush, to understand the factors that affect its formation. As a result of this comparison, the author aims to comprehensively understand what happened to the Marsa Bagoush site from its creation in the Hellenistic era until now.

This paper is part of my master's thesis at the Alexandria Centre for Maritime Archaeology and Underwater Cultural Heritage funded by Honor Frost Foundation.

5) **NAME:** DOĞUŞ COŞAR GÜLER **EMAIL:** doguscosar@outlook.com **LEVEL: AFFILIATION:** MIMAR SINAN FINE ARTS UNIVERSITY

TITLE: ***"Peraia" in Antiquity: Seascape of Aegean Coast and Landscape between Islands and the Mainland***

KEYWORDS: Peraia, Aegean Islands, Northern Aegean, Western Anatolia

ABSTRACT:

The concept of "peraia" in Antiquity reflects a complex interplay between maritime cultural landscapes and seafaring communities. This term, referring to the coastal periphery or territories, emphasizes the significance of both islands and the adjacent mainland in shaping socio-economic interactions and cultural exchanges. The Aegean coast served as a vital seascape for ancient civilizations, facilitating trade and communication between island communities and the Western Anatolian mainland. Peraia encapsulates the dynamic relationships fostered through these maritime networks, as communities relied on the sea for sustenance, trade, and cultural connection. The landscapes of islands like Lesbos and Tenedos, in conjunction with coastal settlements, reveal how geography influenced settlement patterns, resource utilization, and social dynamics.

Archaeological findings—such as port facilities, trade goods, and inscriptions—provide insights into the thriving maritime activities that characterized this era. The movement of people, ideas, and goods across the Aegean not only enriched local cultures but also led to the establishment of shared practices and maritime traditions. This seascape shaped the identity of both islanders and mainlanders, as they navigated the complexities of their interconnected environments. Understanding the role of Peraia in this context enhances our appreciation of the Aegean's historical significance from the 8th century BC to the late Hellenistic period. By examining the interactions between "islands and the Western Anatolian together with Northern Aegean coast", we can better grasp the cultural and economic dimensions that defined ancient seafaring communities.

This exploration not only illuminates the past but also informs contemporary discussions on maritime heritage and the sustainable management of coastal resources.

6) **NAME:** GERARDO DIAZ **EMAIL:** gerardodiaz.rod@gmail.com **AFFILIATION:** BEN-GURION UNIVERSITY OF THE NEGEV

TITLE: ***Satellite-derived Bathymetry for Mapping the Roman Port City of Caesarea Maritima, Israel***

KEYWORDS: Satellite-derived Bathymetry, VENμS, Rock Identification, Maritime Archaeology

ABSTRACT:

Satellite-Derived Bathymetry (SDB) has proven to be a cost-effective and scalable technique for generating high-resolution bathymetric data over large areas. This study focuses not only on deriving SDB at 5-m resolution on the Roman harbour of Sebastos in Caesarea Maritima but also on exploring the ability of multispectral imagery to distinguish between above- and below-water rocks (RAW and RBW, respectively), addressing key research questions such as SDB depth limits and accuracy, as well as the multispectral capacity to differentiate both submerged and exposed rocks. The method integrates multispectral satellite data with coarse sonar measurements, producing a reliable blue-green band ratio algorithm for bathymetry extraction where no data is available. RAW identification is achieved using Principal Component Analysis (PCA) and Maximum Likelihood Classification (MLC), whereas RBW are obtained by subtracting the red edge (ρ702) from the red (ρ666.2) band. These methodologies serve as a preliminary step before deploying more specialised remote sensing equipment such as side-scan sonars and sub-bottom profilers, as it is less expensive (e.g., free data), less time-consuming, and theoretically unlimited in its spatiotemporal coverage. The results showed reliable bathymetry data up to 17 m depth for SDB and the use of the visible and near-red region with the potential for other bands' utilisation for rock identification; nonetheless, this method is limited by adequate satellite band selection, cloud coverage, water turbidity, wave action, sun glint, and chlorophyll content.

7) **NAME:** TZVETA MANOLOVA **EMAIL:** tzveta.manolova@ulb.be **AFFILIATION:** LUDWIG-MAXIMILIANS-UNIVERSITÄT (LMU)

TITLE: ***The Ancient Mediterranean Digital Project: from Idée Fixe to Implementation***

KEYWORDS: Digital Cultural Heritage, Photogrammetry, Virtual Museum, Ship Iconography

ABSTRACT:

The paper will present the current state of the Ancient Mediterranean Digital Project, a multi-component ongoing digital project that involves a database on ancient ship representations, a 3D photogrammetry component, and the planned creation of a virtual museum to host them, executed in the scope of two postdoctoral fellowships, first began at the Université Libre de Bruxelles (2020-2022), to be followed by a Marie Curie at LMU, Germany (2024-2026). Currently covering the eastern Mediterranean of the Late Bronze and Early Iron Age periods with a plan to further expand to the entire basin, the project is intended to become the principal online research tool on the topic of Mediterranean ships of the pre-classical periods, by providing an up-to-date, comprehensive dataset of ship representations, including in-depth contextual and technical information and analysis for each entry as well as high-resolution, detailed visual documentation. The photogrammetry and virtual museum meanwhile are intended to create a space where objects can finally be reunited thematically and regionally – being currently dispersed in multiple museums and sometimes not on display at all.

8) **NAME:** KARAN DESAI **EMAIL:** workforce.karan@gmail.com **AFFILIATION:** UNIVERSITY OF HAIFA

TITLE: ***Transient Harbour Structures: An Example from Contemporary Practice at Mandvi***

KEYWORDS: Harbour, Ship construction, Gujarat, Dhows

ABSTRACT:

Over the last decade, there has been an increased scholarly emphasis on the archaeological investigation of shipyard sites around the world. Despite the prevailing notion that small shipyards with limited activities pose insurmountable challenges for identification based on structural evidence in the archaeological milieu, numerous examples have emerged to contradict this assumption. Shipyard finds along the Thames estuary and around the Southern Baltic help support this. Many of these structures were temporary, leaving little archaeological evidence. This paper investigates the use of temporary shipyard structures in a contemporary context at the Mandvi shipyard located along

the Rukhmavati estuary in Kutch, Gujarat. The construction framework for establishing temporary tidal dockyards and slipways is clarified by analysing satellite imagery data collected over the last decade using Google Earth Pro, supplemented with pedestrian surveys and interviews with local shipwrights and sailors. This study advances our understanding of artificially induced morphological dynamics in shipyards, allowing for more accurate identification of temporary shipbuilding and landing structures in the archaeological record.

9) **NAME:** CHRISTOS KYRIAKOPOULOS **EMAIL:** cchriskir@gmail.com **AFFILIATION:** UNIVERSITY OF IOANNINA

TITLE: ***Aquatic Landscapes in the Aegean Art During the Neopalatial Period: Symbolism and Narrative***

KEYWORDS: Aegean, Art, Water, Symbolism

ABSTRACT:

Water is a relatively rare but selective representation in the iconography of the Neopalatial period, while the aquatic environment is one of the most popular in the representational art of the Aegean. The depiction of water and the aquatic element is associated with a variety of media in Aegean iconography, such as seals, pottery, metalwork and murals. The main goal of this paper is concerned with the iconographic contexts in which the watery element is depicted, which intersperse interpretative approaches of a symbolic nature. During the Neopalatial period, the decorations that highlight water and the aquatic landscape are possibly related to the use of certain vessels, which may in some cases be ritual. From the data of large-scale paintings of the same period in the Aegean, it is clear that the craftsmen were based on iconographic circles, which drew many of their iconographic elements not only from the 'Cycladic' landscape in general but also from the very places where these works were painted, marking their own social and cultural identity. Furthermore, it is possible that riparian landscapes and seascapes (as well as the other environments depicted) were the natural environment in which the female deities as 'Nature Goddesses' and their followers and worshippers interacted. In conclusion, the depiction of water and the aquatic landscape in all means of viewing iconography at the beginning of the 2nd millennium BC, promotes a variety of interpretations that can only be substantiated by a combined examination of Aegean iconography as a unified set of symbols, concepts and beliefs.

10) **NAME:** SIRINE GHIYE – LUCY SEMAAN **EMAIL:** ghsirin@gmail.com – lucysemaan@honorfrostfoundation.org **AFFILIATION:** UNIVERSITY OF ULSTER – HONOR FROST FOUNDATION

TITLE: ***Assessing the impact of coastal changes on maritime archaeological features through remote sensing: The case study of Al-Mina, North Lebanon***

KEYWORDS: Maritime Cultural Landscape, Remote Sensing, QGIS; Changing Coasts

ABSTRACT:

The study of maritime sites does not rely solely on surveys or excavations; change detection is a crucial aspect of understanding the history and development of these sites. Today, remote sensing and GIS tools have become essential methodologies for studying maritime archaeological sites, enabling researchers to identify, assess, and monitor changes and develop future management plans.

This paper aims to demonstrate the efficacy of using historical maps and satellite imagery to study and identify maritime features at the port site of Al-Mina in Tripoli, North Lebanon. Tripoli is recognized for its substantial historical and archaeological significance culminating in its selection as the Arab Capital of Culture for 2024. Despite its rich maritime cultural heritage being understudied, it underscores its prominent status among the cities of the ancient world.

The primary objective of this study is to analyse the changes and evolution of the coastline over time, from Abu Ali River to the Al Bohsas River at al-Mina while also relocating ancient features and structures and understanding how they are impacted by these environmental changes. The methodology for detecting changes involves using band combinations from the Landsat collection to extract water bodies via raster calculation in QGIS, thereby enabling a nuanced representation of the coastline. Additionally, CORONA imagery and an aerial photograph from 1939 are employed to aid in this analysis and interpretation of the ancient maritime landscape at al-Mina, Tripoli.

11) **NAME:** PARASKEVI ATHANASIA (NASIA) PAPADIMITRIOU **EMAIL:** nasiap28@gmail.com
AFFILIATION: IONIAN UNIVERSITY

TITLE: ***Heritage and Community: Understanding the Cultural Significance of Maritime Monuments in Southeast Laconia***

KEYWORDS: Maritime Heritage Management, Collective Memory, Community Identity, Southeast Laconia

ABSTRACT:

In southeast Laconia, maritime archaeological monuments hold significant cultural value. These sites serve not only as remnants of the past but as living symbols of the local community's collective memory. Currently, the community's relationship with these monuments is loosely structured, primarily focusing on archaeological significance or economic potential. While important, this perspective often overlooks deeper layers of meaning.

I propose a broader interpretation of these monuments through concepts such as identity, memory, time, and society, thus challenging traditional perspectives. Social memory, as a collective process, connects communities to their past through shared symbols and experiences. In southeast Laconia, maritime monuments act as physical repositories for these memories, linking the community to its historical roots. Over time, these sites evolve beyond mere historical artefacts, becoming meaningful spaces where personal and collective identities intertwine.

By interpreting these monuments as integral to the community's collective memory and identity, we can create a stronger connection between the people and their heritage. This shift can empower the community to take a more active role in the conservation and protection of these sites, ensuring their preservation not only as historical records but also as vital elements of living culture.

In this way, maritime archaeological culture acts as a bridge between past, present, and future, with the community playing a key role in maintaining its relevance in a changing world.

12) **NAME:** AYA MOHAMED HELMY **EMAIL:** ayahelmy055@gmail.com **AFFILIATION:** CENTRE FOR MARITIME ARCHAEOLOGY AND UNDERWATER CULTURAL HERITAGE, ALEXANDRIA UNIVERSITY

TITLE: ***The Community of Shipbuilders in Egypt during the Greco-Roman Period***

KEYWORDS: Shipbuilders, Shipyards, Shipbuilding, Ship repairing

ABSTRACT:

Since Egypt has coastlines on the Mediterranean Sea, the Red Sea, and the River Nile, maritime transportation played an extensive role in Egypt throughout the ages. Consequently, shipbuilding took place in Egypt as an essential industry as well as the ship repairing activity. The Greco-Roman period is an influential time in the Egyptian history, as during the Greco-Roman period, Egypt witnessed a massive prosperity and development in all aspects of life, particularly in maritime transportation that reflected in both economic and political aspects. Although archaeological excavations revealed a lot of remains that provide us with knowledge of maritime installation sites, shipyards, and shipbuilding activity, it is required to get more information about the shipbuilders themselves. This paper aims to present the industry of shipbuilding in Egypt during the Greco-Roman period from a social aspect to know more details about the community of shipbuilders, the hierarchy of workers, their wages and the workflow for building different vessels. This study depends mainly on ancient texts and papyrus as documentary evidence in order to discover the human element behind the process of shipbuilding or repairing. Indeed, the human element in the shipbuilding industry cannot be ignored, as our perception of the industry of shipbuilding will be complemented by studying this occupation from both of the materialistic and social aspects.

13) **NAME:** ALESSANDRO LABRIOLA **EMAIL:** alessandro.labriola@poliba.it **AFFILIATION:** UNIVERSITÀ DEGLI STUDI DI BARI

TITLE: ***Gateway to the East: Urban Image and Sea Routes in Roman Brundisium***

KEYWORDS: Coastal Landmarks, Harbour Architecture, Visual Impact, 3D Reconstruction

ABSTRACT:

After its foundation as a Latin colony in 244 BC, Brundisium rapidly replaced Taranto as the main harbour in the region and emerged as the principal point of departure from Italy to Greece and the East, establishing a close relationship with the Hellenistic world. This paper proposes an analysis of

the visual interaction of Brindisi and its port with the sea routes that crossed the Adriatic in Roman times, through the elaboration of reconstructive perspective views based on a 3D digital model. The latter will be produced by crossing the (scarce) available archaeological data with the most recent reconstructions of the Roman urban structure, the information coming from historical cartography and a GIS-based topographical analysis of the site. The viewpoints of the proposed perspectives will be chosen along the main routes leading to the harbour, according to indications from ancient sources as well as from 18th and 19th century portolan handbooks. This will make it possible to represent the dynamic perception of the cityscape from oncoming ships and to assess the extent to which landmarks in the urban space could provide seafarers with long-distance reference points. Particular attention will be paid to the study of the visual impact of the two-column monument, which will be compared with similar monumental elements in eastern Mediterranean harbours, such as those of Caesarea and Miletus.

14) **NAME:** KARL SMITH **EMAIL:** karl.smith@arch.ox.ac.uk **AFFILIATION:** UNIVERSITY OF OXFORD

TITLE: ***New Large-Scale Projective Visibility Analyses for the Mediterranean***

KEYWORDS: Visibility, GIS, Navigation, Mediterranean

ABSTRACT:

This paper presents new 3D 'projective' visibility maps for the Mediterranean region. Visibility is a crucial aspect of seafaring and navigation, and as such many researchers have mapped sea-facing and land-facing visibility within the Mediterranean. These studies have tended to be regionally-focused, and where they have taken advantage of GIS they generally rely on 2D methodologies that parameterise visibility as a simple binary – visible or invisible. We know from experience that landscape visibility is more nuanced, and that atmospheric factors like rain, fog, and dust can dramatically alter our view of land and sea. To account for this, we use a 3D 'projective' GIS methodology (i.e. measuring the area that an object subtends in an observer's visual field) to evaluate land/seascape visibility. The analyses presented in this paper use NASA, JAXA, and EMODnet satellite elevation and bathymetry data to produce projective visibility plots that quantify the apparent size of land as seen from the sea, and vice versa. By calculating these plots for a network of observation points throughout the Mediterranean we build visibility surfaces that we use to (1) assess existing Mediterranean visibility maps, (2) compare sea-views and land-views within the Mediterranean littoral, (3) illustrate the effects of atmospheric phenomena on maritime visibility, and (4) suggest possible topographic seamarks based on their visual prominence.

15) **NAME:** MOHAMED MAHMOUD ALY **EMAIL:** Muhamedaly85@gmail.com **AFFILIATION:** 1. CENTRE OF MARITIME ARCHAEOLOGY AND UNDERWATER CULTURAL HERITAGE, ALEXANDRIA, EGYPT. 2. DEPARTMENT OF UNDERWATER ARCHAEOLOGY, MINISTRY OF ANTIQUITIES, EGYPT

TITLE: ***The Contribution of Maghrebi Geographers in the Study of the Mediterranean***

KEYWORDS: Nautical Manuscripts, History, Seafaring, Mediterranean

ABSTRACT:

Medieval nautical manuscripts constitute an indispensable resource for our understanding of the history of seafaring and maritime culture in the Mediterranean basin, providing vital insights into the nautical geography, cartographic techniques, and folk astronomy circulating in the region at that time.

The cartographic workshop of the al-Sharafi family is the only one known in North Africa from the 16th century, with cartographic expertise passing down through four generations. Its most prominent chart maker, Aly ibn Ahmed ibn Mohamed Al-Sharafi compiled two nautical atlases, one in 1551 and the other in 1570; these are the most important examples of North African cartography.

Al-Sharafi's atlases contain a wide range of information useful to seafarers, including a circular world map that shows the classical thoughts of the ancient world, seven charts illustrating the ports, bays, islands and cities of the Mediterranean and Black Sea; as well as several cosmological diagrams; wind rose, a sacred geography; lunar mansions; and methods to determine daylight hours based on shadow length.

This presentation will present a detailed analysis of the two nautical atlases, reread the original manuscripts, investigate the sources from which the author obtained his information, and compare them with contemporary Catalan, Venetian, and Ottoman works.

16) **NAME:** KONSTANTINOS THOMAS **EMAIL:** konthomas98@gmail.com **AFFILIATION:** DEPARTMENT OF MARITIME CIVILIZATIONS, UNIVERSITY OF HAIFA

TITLE: ***Hydraulic Properties of the Mortars at Myriam's Well Beach, Tiberias (Israel)***

KEYWORDS: Hydraulic Mortar, Tiberias, Analysis

ABSTRACT:

My research, which was carried out in the framework of my thesis, is based on the chemical and mineralogical characterization of mortar samples which were selected from the Concrete Pier, the City Wall and the Long Structure in Myriam's Well Beach in Tiberias, Israel. The questions of the research are related to the technological traditions of the mortars, the association of the concrete with the environmental conditions and the lake level fluctuations and the materials' chemical and mineralogical properties. It could be a significant contribution to the scientific community because of its interdisciplinary character in the field of Archaeological Sciences and Maritime Archaeology. It can be considered as one of the first mortar examinations in a freshwater environment. In order to answer the questions of the research, the chemical and mineralogical characterization of the mortars in Myriam's Well Beach was necessary. More specifically, the advanced scientific methods of XRPD, FTIR, Optical Microscopy and SEM-EDS were applied on selected mortar samples. The analytical approach could give some conclusions to my research. The characterization of the mortar samples has given answers regarding its mineralogical and chemical composition and thus the mortar technologies used for the construction of buildings in a freshwater environment. The mortar examination helped me understand the relationship between the concrete composition and the environmental conditions. Moreover, the salinity of the Lake Kinneret in which the structures were located is associated with the mortar samples. Questions regarding the materials' properties in mortars have also been examined and answered via this research. Last but not least, the structures in Myriam's Well Beach were divided into different construction phases according to their mortar composition.

17) **NAME:** DESPINA ATHANASIOU **EMAIL:** deppyathanasiou@gmail.com). **AFFILIATION:** UNIVERSITY OF THESSALY

TITLE: ***"Phournoi Shipwreck 9" and the Presence of Late Roman 4 Amphorae in the Phournoi Archipelago***

KEYWORDS: Shipwreck, Trade, Amphorae, Aegean

ABSTRACT:

This research aims to present an unpublished shipwreck discovered in the archipelago of Phournoi, in the eastern Aegean Sea, the cargo of which consists exclusively of Late Roman 4 amphorae. For the derivation of this paper, the questions that were investigated mostly pertain to the dispersion of those amphorae in the Aegean, focusing on those found underwater.

The production and transportation of Late Roman 4 amphorae begins in the 1st century AD, in the region of Palestine, and continues until the 7th century, their documentation as part of cargo, though, is quite limited. The importance of this study lies on the enrichment of the bibliography concerning the location of Late Roman 4 amphorae in the sea, since with the preliminary bibliographical research so far, no equivalent published shipwreck in the Aegean seems to have been reported. This research was conducted mainly by examining unpublished, original material from the Phournoi expedition (2015-2024). Furthermore, extensive bibliographical inspection was conducted, as well as reading of excavation and conservation reports, and perusal of photographs and drawings. After the analysis of this data, it becomes evident that Late Roman 4 amphorae rarely constitute the exclusive cargo of a ship. To conclude, with the discovery of this shipwreck, the fairway of Phournoi-Samos has emerged as a passage of ships from the eastern Mediterranean towards the north-northeastern Aegean and possibly the Black Sea.

18) **NAME:** Juan del Caño Cobo **EMAIL:** Judelcob@gmail.com **AFFILIATION:** UNIVERSITY OF CYPRUS

TITLE: ***Phoenician Maritime Transport Containers from Kition during the Cypro-Classical Period. A Maritime Archaeology Approach***

KEYWORDS: Maritime Transport Containers, Phoenician, Stowage, Trade

ABSTRACT:

Phoenician Maritime Transport Containers are a key artefact type in understanding Iron Age maritime connectivity in the Mediterranean. While their research has attracted a lot of scholarly attention with regard to chrono-typological issues, their significance to maritime archaeology has not been highlighted enough, particularly because of the scarcity of archaeological evidence from shipwrecks. In order to fill this gap, this study focuses on the shape of Phoenician containers as cargo items. Using as case studies certain types of the Cypro-Classical Period exported to Cyprus, hypothetical stowage patterns have been suggested in a 3D environment.

The results indicate that the different body shapes have a direct influence on the stability of the cargo. More specifically, biconical shapes would allow a more stable stowage than cylindrical ones. However, the increase in stability would in turn imply a reduction in the amount of product transported per square metre. The transportation of biconical containers would decrease the cost-effectiveness of the trip compared to cylindrical containers, but at the same time would increase the chances of a safe journey. On top of that, interesting questions regarding the stowage of mixed cargoes, i.e. shipment of different types of Phoenician containers, are raised.

While this experiment with 3D models has to be tested against archaeological finds, it provides useful insights into the seaborne trade mechanisms in the Eastern Mediterranean.

19) **NAME:** ARISTEIDIS VOULGARIS **EMAIL:** arisvoulgaris@gmail.com **AFFILIATION:** INDEPENDENT RESEARCHER - DIRECTORATE OF CULTURE – TOURISM MUNICIPALITY OF THESSALONIKI

TITLE: ***The Sea Water Effect on the Bronze Antikythera Mechanism***

KEYWORDS: Antikythera Mechanism Fragments, Bronze Disease, Bronze Corrosion, Atacamite

ABSTRACT:

Chemical reactions with seawater changed the bronze material, the colour and the density of the Antikythera Mechanism. The deformation and displacement of the bronze parts are clearly visible on the visual photographs and the X-Ray computed tomography (CT) scans of Antikythera Mechanism fragments. The abrupt dehydration of the Mechanism after its retraction from the Antikythera Sea bottom further aggravated its condition. We present the first steps of the copper/bronze corrosion under the sea by the study of simulated samples in laboratory seawater, as also the implications on the parts' deformation and the attempts of the reversed engineering in order to digitally restore the deformed/missing parts of the Antikythera Mechanism.

20) **NAME:** ELENI KOLAITI - NIKOS MOURTZAS **EMAIL:** kolaitieleni@gmail.com / info@aktes.gr - nikosmourtzas@gmail.com **AFFILIATION:** DR MINING ENGINEER NTUA, EXT. COLLABORATING RESEARCHER, INSTITUTE OF HISTORICAL RESEARCH/NATIONAL HELLENIC RESEARCH FOUNDATION (IHR/NHRF), EMERITUS RESEARCHER, DEPARTMENT OF CLASSICS, UNIVERSITY OF NOTTINGHAM, SOCIETY FOR THE STUDY OF ANCIENT COASTLINES - AKTES NPO - DR GEOLOGIST NTUA, INDEPENDENT RESEARCH SCHOLAR, SOCIETY FOR THE STUDY OF ANCIENT COASTLINES - AKTES NPO; HONORARY RESEARCH FELLOW, DEPARTMENT OF CLASSICS, UNIVERSITY OF NOTTINGHAM

TITLE: ***Tracing the Roman Coastline in the Aegean: the Submerged Villae Maritimae***

KEYWORDS: Villae Maritimae, Sea Level Change, Roman Coastline, Aegean Sea

ABSTRACT:

A vital component of the coastal and underwater cultural heritage of Greece is the coastal farmsteads (villae maritimae). The establishment of these farmsteads in the Greek territory from the 1st century AD onwards resulted from significant changes in the structure of the production economy, cultivation strategies, and agricultural practices, as well as shifts in land sharing and ownership

following the Roman conquest of Greece. The villa-farmstead model was finally abandoned by the end of the 6th century AD. Coastal farmsteads share common characteristics: their position along the coastal zone, always situated outside the urban fabric of the time, and their production activities, which were closely tied to their geographic location and the natural resources available in those areas. In this paper, we present fourteen submerged building complexes located along the coast of the Argolis Peninsula and the Laconic Gulf (Peloponnese), as well as on Paros Island (Cyclades).
Determining the sea level at the time when a coastal farmstead was in use is a challenging task that requires the recording and interpretation of all available archaeological and geomorphological sea-level indicators. By employing a geoarchaeological method of approach, we inferred a total change in sea level of 3.60±0.20 m for the Peloponnese and 2.40±0.25 m for the Cyclades over the past 2,000 years. This evidence has enabled us to reconstruct the coastal landscape and gain insights into the maritime history of the study areas. Villae maritimae are crucial to tracing the Roman coastline, underscoring the importance of preserving this rich coastal heritage.

21) **NAME:** VERONICA CAPRIOTTI **EMAIL:** s2754787@ed.ac.uk **AFFILIATION:** UNIVERSITY OF EDINBURGH

TITLE: ***The Piraeus: a Seafaring Community Shaped by Social Interactions and Cultural Tastes***

KEYWORDS: Piraeus, Naval Class, Seafaring, Community

ABSTRACT:
The Piraeus will be analysed sociologically to uncover the connections between agents engaged in the harbour's economy and the operations of the Athenian Navy. Labour relations and the cultural lives of individuals within the harbour's social milieu foster a community unified by similarities in living conditions, tastes, social behaviours, and political affiliations. This study will examine the Piraeus not solely from an archaeological perspective, as is often the case, but as a site of class formation of what may be identified as an Athenian naval class (which was in fact identified as such in antiquity for example in the Old Oligarch and in Aristotle's Politics 1291b17-27). To this end, literary and epigraphic sources will be combined to reconstruct social relations: comedies, speeches, literary portrayals of the "men of the Piraeus," references to instances where the harbour was separated from the Asty, and the stance of the naval class during oligarchic coups will serve to trace the seafaring community's role as an active agent in Athenian history during the 5th and 4th centuries. The Naval Records will be examined to shift focus towards the individuals involved in the technical operations of the navy, such as shipbuilding for example, rather than the institutional framework,

investigating labour and wage differentiation within the harbour and its impact on the socio-political lives of those involved.

The findings will offer a sociological interpretation of the historical entity of the Piraeus, a conceptualisation of a naval class, and an insight into the cultural realities underpinning it.

22) **NAME:** JEREMY S. GREEN **EMAIL:** jgreen5544@rogers.com **AFFILIATION:** UNIVERSITY OF SOUTHAMPTON

TITLE: ***A Multi-faceted Expansion, Update and Re-Analysis of a Maritime Archaeology Database: Ancient Shipwrecks of the Mediterranean and the Roman Provinces. A.J. Parker, BAR International Series 580 1992***

KEYWORDS: Eastern Mediterranean Shipwrecks, Database, A.J. Parker, Geographic Information Systems (GIS)

ABSTRACT:

It has been 32 years since A.J. Parker released his seminal work. Yet, the literature still lacks a comprehensive update, expansion, and reanalysis of all known ancient Mediterranean shipwrecks.

In 2022, the author conducted research that resulted in a substantial expansion and update of Parker's 1992 catalogue raisonné and the creation of a new database titled Green 2022, which encompassed 2,100 wrecks with over 126,000 data fields. Employing interdisciplinary techniques, such as GIS, the author aimed to confirm, modify, challenge, or introduce new ideas relative to Parker's research.

Three notable examples of conclusions drawn from Green 2022 that pertain to eastern Mediterranean seafaring are as follows. First, an updated graph illustrating shipwrecks by century enhances our understanding of the expansion and decline of Roman trade, revealing new evidence supporting a resurgence of eastern trade during the Byzantine Empire. Second, the distribution and density of shipwrecks have shifted more towards the eastern Mediterranean, with the region now accounting for 33% of all Roman-period shipwrecks, compared to 25% in 1992. Third, an analysis of shipwreck concentrations across the 22 Roman Sea zones provides a revised perspective on Parker's distribution of shipwrecks by modern countries, highlighting three eastern Mediterranean zones – Mare Icarium, Mare Ligusticum, and Mare Myrtoum – that now rank among the top five.

Examining the Green 2022 dataset has made significant breakthroughs in research. The result is an enhanced understanding of the role of ships, maritime trade, technology, and connectivity of eastern Mediterranean seafaring within the broader context of the Mare Nostrum.

23) **NAME:** ANTONIA SCIANCALEPORE **EMAIL:** antonia.sciancalepore@cultura.gov.it
AFFILIATION: EXTERNAL COLLABORATOR OF MUSEO DELLE CIVILTÀ (ROME)

TITLE: ***Ships from the Museo delle Civiltà - A Naval Collection to be Rediscovered***

KEYWORDS: Cultures, Knowledge, Shipbuilding, Waterways

ABSTRACT:
The waterways are the guardians of the different cultures that have met and overlapped, in a mixture of languages and dialects, traditions and customs, techniques and construction notions. The study project "Humanity's Water Journey" started in 2023, aims to address the issue of humanity's journey on water, considering the valuable chronological context offered by the Museo delle Civiltà (Rome) which, ranging from prehistory to the modern and contemporary age, from Europe, Asia, Africa, Oceania and the Americas, allows the evolution of shipbuilding technique to be outlined quite comprehensively. The research is proceeding with the structuring of a complex database that collects all existing documentation.

In this conference in particular will be presented the results of a first phase of this project, conducted on model boats from the Eastern Mediterranean (sambuq) and the traditional Italian boats of the Adriatic Sea (trabàccoli).

Investigating the models rather than the real boats does not diminish the value of data analysis, because the models have important structural and technical details that faithfully reflect the originals. In fact, on the models is possible to observe details that in real size can escape. The boat in small dimensions also has the hand of the 'shipwright' and allows to reconstruct and understand the different naval phases of construction.

24) **NAME:** MAX MacDONALD **EMAIL:** max.macdonald@arch.ox.ac.uk **AFFILIATION:** UNIVERSITY OF OXFORD

TITLE: ***Sourcing Ships from Nut and Acorn to Mast and Gunwale***

KEYWORDS: Shipwrecks, Shipbuilding, Ship Repair, Resources

ABSTRACT:

The cargoes of ancient shipwrecks in the Mediterranean are often found to contain material of diverse origins, but the ships themselves were also constructed with material from around the ancient world. What did it take to build a ship in the Late Bronze Age and Iron Age Mediterranean (ca. 1500-500 BC)? How much of the construction material needed to be imported from other regions? Were the processes and procedures of resource acquisition always the same no matter where and when? Using evidence from wrecks, this paper will explore the origins of materials used in the construction and repair of ships and investigate the networks which were utilised by the Late Bronze and Iron Age shipbuilding industries. This will be accomplished by examining the known sources of shipbuilding material, e.g. the tree and plant species which have been identified in ancient shipwrecks and comparing those ranges to identify regions which were particularly well-suited for ship construction, as well as those that were not. As part of the Practical Mariner Project this research investigates the environmental foundations of any sea-journey, the construction and repair of the ships themselves.

25) **NAME:** CAL POLS **EMAIL:** C.Pols@soton.ac.uk **AFFILIATION:** UNIVERSITY OF SOUTHAMPTON

TITLE: ***Semi-Automated Methods for Shipwreck Detection: Evaluating Machine Learning and Topographic Inference Approaches***

KEYWORDS: Shipwrecks, Bathymetry, Automation, Survey

ABSTRACT:

Shipwrecks constitute a significant amount of underwater cultural heritage (UCH) sites that are likely to be increasingly discovered due to developments in autonomous marine survey methods and continued offshore development. Moreover, the increasing availability, spatial coverage, and resolution of (marine) remote sensing data is creating pressure on current archaeological workflows to identify potential sites in these large datasets. As a result, new archaeological prospection methods

are embracing semi-automated methods to identify archaeological sites and features in remote sensing imagery.

This research compares different machine learning workflows against two topographic inference methods to evaluate their performance for identifying shipwrecks across large areas of the United Kingdom's (UK) continental shelf in bathymetry data. Through this comparison, this research aims to discuss the viability of off-the-shelf semi-automated methods for archaeological site detection in large marine spatial datasets.

26) **NAME:** SAMUELE ONGARO **EMAIL:** S.Ongaro@soton.ac.uk **AFFILIATION:** UNIVERSITY OF SOUTHAMPTON

TITLE: ***New Inundation Models for the Northern Adriatic: Palaeolandscape Evolution and Implications for the Neolithic Transition***

KEYWORDS: Submerged Landscapes, Neolithic Transition, Northern Adriatic, Palaeogeographic Reconstructions

ABSTRACT:

Recently it has become increasingly obvious that in order to investigate the spread of farming along the Mediterranean shores, we need to focus our attention on submerged landscapes. This is because, due to variations in past sea-level, the coastlines of that time lie now underwater. Yet, locating submerged prehistoric sites is often challenging, and for this reason, studies of the palaeolandscape are often left outside discussions of the Neolithic Transition. This is the case of the Northern Adriatic, an area of particular interest not only because of our poor understanding of the Neolithization of the region, but also since, due to the particular geomorphological setting, considerable changes in the landscape have occurred since then. In fact, palaeolandscape reconstructions are key, both to provide a spatiotemporal framework to the Neolithic Transition in the area, and to understand the dynamics of Neolithization through the investigation of Mesolithic and Neolithic ecologies. Therefore, this paper presents new inundation models for the Northern Adriatic, portraying the palaeolandscape evolution at a regional scale. This will be achieved by analysing unpublished sub-bottom profiles, which will be integrated with available sea level index points and environmental data. Thus, different phases of sea-level rise, marked by the alternation of periods of stasis and rapid inundation, will be identified, while the evolution of a series of paralic and coastal environments, from lagoons and estuaries to freshwater marshes and deltas, will be recognised. Finally, the data produced will be used to discuss implications for the Neolithic Transition in the area.

27) **NAME:** ELENI KOLAITI - N. MOURTZAS **EMAIL:** kolaitieleni@gmail.com - nikosmourtzas@gmail.com **AFFILIATION:** DR MINING ENGINEER NTUA, EXT. COLLABORATING RESEARCHER, INSTITUTE OF HISTORICAL RESEARCH/NATIONAL HELLENIC RESEARCH FOUNDATION (IHR/NHRF), EMERITUS RESEARCHER, DEPARTMENT OF CLASSICS, UNIVERSITY OF NOTTINGHAM, SOCIETY FOR THE STUDY OF ANCIENT COASTLINES - AKTES NPO - DR GEOLOGIST NTUA, INDEPENDENT RESEARCH SCHOLAR, SOCIETY FOR THE STUDY OF ANCIENT COASTLINES - AKTES NPO; HONORARY RESEARCH FELLOW, DEPARTMENT OF CLASSICS, UNIVERSITY OF NOTTINGHAM

TITLE: ***Revisiting the Coastscape of Ancient Halieis (Porto Cheli, Peloponnese, Greece)***

KEYWORDS: Sea Level Change, Coastscape, Closed Harbour, Ancient Halieis

ABSTRACT:

At the southern tip of the Argolic Peninsula, on the south-eastern side of the bay of Porto Cheli, lies the ancient walled city of Halieis, the northern part of which is today submerged below sea level. The site appears to have been inhabited since the Final Neolithic or Early Bronze Age. The town of Ancient Halieis was founded in the 8th-7th centuries BC, flourished during the Classical period, and was abandoned in the late 4th or early 3rd century BC. Brief habitation of the then coastal area is evidenced during Late Roman/Early Byzantine times. The existence of a closed harbour inside the city walls has been supported by the excavators of the site but challenged by other scholars. In this paper, we re-evaluate from a geoarchaeological perspective previously published archaeological data, in relation with the robustly documented relative sea level changes that have occurred over the past 3,500 years along the Argolic coast, which clearly demonstrate that the suggested closed harbour cannot be substantiated by archaeological or geomorphological evidence. With the sea level from the Archaic period until the Late Roman/Early Byzantine years at -3.65 ± 0.25 m lower than at present, the coastscape was significantly different. The consequent sea level rise caused the Classical coastline to recede quite substantially, resulting in a marine transgression of at least 100 m at the western end of the northern wall and more than 350 m northeast of the city, in the vicinity of the Sanctuary of Apollo.

28) **NAME:** MADISON SCRABECK **EMAIL:** M.Scrabeck@soton.ac.uk **AFFILIATION:** UNIVERSITY OF SOUTHAMPTON

TITLE: ***Triple Bronze and Oak: Emotions in Ancient Mediterranean Seafaring***

KEYWORDS: Emotion, Phenomenology, Sailing, Experimental

ABSTRACT:

It is difficult to imagine a world where emotion does not exist, yet archaeological narratives are often devoid of any attempt to discuss emotion. Emotion is inseparable from the human experience and if the goal is to understand humanity in the how and why people and things materialise themselves throughout time, emotion cannot be ignored and must be engaged with. When research has undertaken the difficult task of examining emotion, it has primarily stayed within the domain of death, dying, and mourning due to its status as an "emotionally heightened space" (Fleisher & Norman 2016: 8); however, humans experience heightened emotions during different events in different spaces throughout their lives, particularly concerning events like birth, coming of age, travel and movement between places, and enduring natural disasters. These spheres of the lived experience are equally rich for archaeological examination.

This study aims to centre the discussion of emotions within ancient Mediterranean seafaring, as it is uniquely positioned to answer not only questions about emotion but also about notions of travel and movement itself in connection to identity, perception, and 'being' in the world simultaneously. The approach is a three-pronged examination of the ancient world during the Roman period (310 BC – 200 AD), focusing on an examination of archaeological objects found within shipwreck contexts associated with ritual behaviours, such as apotropaic objects, in addition to an examination of textual evidence of people from the past experiencing maritime space and activities, giving worthwhile testimony to their perceived world and emotional realm of living and being at sea. Finally, in order to augment the understanding of the material culture and textual evidence, experimental archaeology has been identified as a fruitful avenue into examining how we as researchers think about the archaeological and textual material associated with these 'heightened emotional spaces'. There is no way to know truly how people felt in the past, however this study makes use of different avenues of methodological approaches that can elucidate certain aspects of existence that are pertinent to all humans, past, present, or future. Theoretical frameworks such as 'evocative space', atmosphere, embodiment, and other phenomenological approaches, can be applied to the perception of maritime space and the experience of seafaring.

29) **NAME:** ALEXANDRA DESIKOU - TSONAKAS KONSTANTINOS **EMAIL:** alexdesik@gmail.com - kostastso00@gmail.com **AFFILIATION:** NATIONAL AND KAPODISTRIAN UNIVERSITY OF ATHENS

TITLE: ***A Cultural Route from Mycenae to Thebes Through the Corinthian Gulf***

KEYWORDS: Cultural Route, Corinthian Gulf, Mycenaean Civilization, Maritime Travel

ABSTRACT:

The Mycenaean Palaces shared similar beginnings, growth and end; however, there is little evidence that provides us with information about their interrelationship. Therefore, we do not know the exact political nature between the Palaces. A single example from a Linear B tablet from the Late Helladic Mycenae (circa 1200-1100 B.C.) gives us insight into a gift-exchange of a type of cloth between Mycenae and Thebes. Setting aside the political implications of such an exchange, we could focus on the possible route that such a gift could have taken in order to reach Thebes. The route we want to describe brings forth a new perspective that revolves on the interaction of the Palaces via seaborne means. The cultural route will commence from Argolid in Peloponnese and will end up in Boeotia in Central Greece, while sailing along the eastern part of the Corinthian Gulf. Moreover, it highlights the role of the Corinthian Gulf as a unification factor between these two cultural districts. This project aims to create a unique route by combining the natural and archaeological heritage of the region of interest. The visitors would be able to follow an ancient route and at the same time learn experientially the connection between the Mycenaean palaces. Another objective of this project is the familiarization with seaborne and land travels of the Mycenaean world. Finally, throughout this journey the archaeological seascape is integrated into modern times, in other words, the past becomes part of the present.

30) **NAME:** CELIA PRESCOTT **EMAIL:** cpd1g22@soton.ac.uk **AFFILIATION:** UNIVERSITY OF SOUTHAMPTON

TITLE: ***Changing Seascapes: the Impact of Coastal Change on Lebanese Maritime Archaeology***

KEYWORDS: Coastal Sediment Dynamics, Geoarchaeology, Sea-level Change, Eastern Mediterranean

ABSTRACT:

Coastal change presents a clear threat to cultural heritage. Maritime archaeological sites at the boundaries between land and sea are at risk of flooding and erosion exacerbated by sea-level change. As it has been widely acknowledged that not all heritage can be saved from destruction, it is important to study the resilience of endangered maritime archaeology, or their ability to withstand and adjust to the adverse effects of coastal change. The Levant is an area both rich in maritime archaeology and subject to the adverse impacts of coastal change. In Lebanon, assessments of coastal resilience considering these adverse impacts are important to informing effective management strategies for its valued coastal heritage and places.

The overarching aim of this research is to assess the impacts of coastal change on the maritime archaeology of the Lebanese coast, through a geophysical and hydrodynamic characterisation of its nearshore environment and sediment dynamics. This paper presents the results of a characterisation of the hydrodynamic regime of the Lebanese coast – specifically storm surges and wave patterns – using high-resolution reanalysis data, towards an assessment of the risks of coastal flooding and erosion.

31) **NAME:** LEONIE HOFF **EMAIL:** leonie.hoff@hmc.ox.ac.uk **AFFILIATION:** UNIVERSITY OF OXFORD

TITLE: ***The Role of Maritime Topography in Influencing Religious Behaviour at Thonis-Heracleion, Egypt***

KEYWORDS: Seafaring Communities, Geoarchaeology, Maritime Cultural Landscapes, Palaeoenvironments

ABSTRACT:

Thonis-Heracleion was a major port-city in the Late and Ptolemaic Periods of Egyptian history, located in the western Delta, around 30km north-east of modern Alexandria and directly at the entrance to the Canopic branch of the Nile. The city was strongly influenced by its watery

surroundings, situated along the coast and with the city spread out across a series of islands connected by channels, reminiscent of a 'Venice on the Nile'. Notably, we can trace how this maritime environment extended its influence on the religious domain, influencing votive practices of the city's inhabitants and even affecting the manner in which major religious processions were enacted. Festivals such as the Osiris Mysteries, celebrated throughout much of Egypt, were adapted to the watery environment by involving processions of the cult image on a ritual barque along the main waterways of the city. Indeed, a probable example of one such ritual barque was found deliberately scuttled in the middle of the Grand Canal, the main waterway of the Temple of Amun-Gereb, surrounded by an array of votive offerings, in what appears to be a ritual deposition of this sacred ship. Moreover, a great number of simpula, metal ladles used for pouring liquids in Egyptian rituals, have been found deposited along the waterways. This suggests that water played a significant role in religious practices, as shown by the objects associated with liquid use. Additionally, the placement of these objects by the waterside implies that these areas were highly involved in ritual activities. However, it does not merely seem to be the Egyptian population at Thonis-Heracleion whose religious comportment is influenced by the maritime topography. The material culture of the city demonstrates the presence of a Greek community within the city and large-scale interchange with Greek traders coming into Egypt. Numerous finds of Greek weights within the waterways have been interpreted by excavators as ex-votos by Greek sailors, possibly to thank the gods for safe passage across the seas. In this way, the maritime topography appears to have had a major effect on the religious behaviour of the city's inhabitants, allowing us insight into how maritime communities are influenced by their close relationship with the sea.

32) **NAME:** STAMATIS FRITZILAS **EMAIL:** sfritzilas@gmail.com, sfritzilas@academyofathens.gr **AFFILIATION:** ACADEMY OF ATHENS, RESEARCH CENTRE FOR ANTIQUITY - POSTDOCTORAL RESEARCHER, NATIONAL KAPODISTRIAN UNIVERSITY, OF ATHENS - SCHOOL OF PHILOSOPHY, DEPARTMENT OF HISTORY AND ARCHAEOLOGY

TITLE: ***Mistress of the Sea: Isis Pelagia and the Euploia Inscriptions***

KEYWORDS: Isis, Navigation, Voyage, Seafaring

ABSTRACT:

This paper emphasizes the close relationship of the statues of Isis holding a sail with the inscriptions of navigation on the Greek islands and coasts. In her role as a marine goddess, Isis was addressed with the titles Pelagia, Pharia, and Euploia. Several statues and reliefs to the 2nd or 3rd century after Christ depict the goddess of the open sea and navigation. Isis as mistress of the sea also appears on

coins of the 2nd and 3rd centuries AD. It also presents new research on the rock-cut inscriptions at the cove of 'Grammeno' on the small island of Proti, off Messenia's west coast. Several mention the term εὔπλοια, i.e., fair voyage. These pleas for safe passage were probably carved by seamen, whose ships would have anchored at the cove. The inscriptions often mentions the port of origin, usually in the Aegean or on the coast of Asia Minor, along with the seafarer's name. The Eastern Mediterranean had its fair share of dangerous voyages, as indicated by the presence of euploia inscriptions on other Aegean islands, such as Syros and Thasos, and on the cliffs of Grammata Bay, directly north of the Acroceraunian Mountains and southwest of Vlorë in Albania. This paper correlates the evidence from Euploia inscriptions with points where ancient ships would change course. Euploia inscriptions thus mark dangerous points along a maritime route, whence ships would strike out across open water, or to which they returned after a long voyage. What is interesting in the case of the Euploia inscriptions is that they are also connected to the main sea routes that originated in or passed through the Peloponnese and led to Italy and Sicily. The first route was coastal, hugging the shores of Western Greece and Italy. The second was thoroughly seagoing and involved sailing across the open sea.

33) **NAME:** VASILIS PAPADAKIS **EMAIL:** vs.papadakis@gmail.com **AFFILIATION:** UNIVERSITÉ D'AIX-MARSEILLE

TITLE: ***Reassessment of the Ancient Harbour-City of Asopos (mod. Plytra): a Semi-Submerged City in Laconia, South Peloponnese, Greece***

KEYWORDS: Erosion, Underwater Archaeology, Harbour-city, Greece, Asopos

ABSTRACT:

The remains of harbour-city near the modern settlement of Plytra in Laconia Gulf, at Xyli Bay in southern Peloponnese, are linked to the ancient city of Asopos, which originated in the middle/late Hellenistic and Roman periods. These antiquities can be observed on the boundary of a constantly eroded spit landform, while Byzantine constructions are confined to the eastern bay. The coastal configuration of the site was assessed utilizing non-invasive interventions in relation to the coastal and submerged infrastructures, which are affected by coastal erosion (differential-weathering), and formation processes (energetic waves, subaerial weathering, agricultural erosion, and unlawful excavation). Furthermore, the carved foundations of defensive fortifications (?) near the southeast end of the submerged peninsula may provide new insights into the determination of past sea levels, reopening the discussion on the designation of a harbour basin.

34) **NAME:** MARK DAVIES **EMAIL:** mcd1e20@soton.ac.uk **AFFILIATION:** UNIVERSITY OF SOUTHAMPTON

TITLE: ***Mercenaries, Conscripts and Slaves: the Forgotten Crews of the First Punic War***

KEYWORDS: Roman Navy, First Punic War, Captives, Crews

ABSTRACT:

Polybius is a respected ancient authority on the First Punic War (FPW). However, he was fixated on the influence of Tyche (or Fortuna) on the Romans and on the importance of noble individuals. This obsession means that the contribution of the crews of the Roman fleets is overlooked in his account. This paper will bring these crews, the "humble unknown", to light (Thiel 1946:28). It is often assumed that the crews were lower-class Romans, however there is evidence that Rome's Greco-Italian allies, as well as Carthaginian captives, crewed the Roman warships. As the FPW was essentially a naval war, this paper calls for a radical reassessment of the contribution of Roman allies and captives to the war effort.

Archaeology can contribute to the debate. During the FPW Roman coins were struck outside Rome for the first time - at Cosa, and possibly at Praeneste. This may be significant, as they could have been made to pay for labour and materials sourced outside of Rome. The rare examples of coins from Praeneste are decorated with a warship's prow. Some have been found in a funerary context and thus were valued by the deceased. It is tantalising to hypothesise a connection between the deceased and the FPW.

The modern interpretation of ancient naval warfare is to treat the marines and crews of a fleet as an amphibious strike force. However, if the crews were conscripted, this likelihood demands a reconsideration of scholars' understanding of Roman naval tactics in the Hellenistic period.

35) **NAME:** EIRINI KAPOGIANNI **EMAIL:** eir.kapogianni@gmail.com **AFFILIATION:** INDEPENDENT RESEARCHER

TITLE: ***Surfacing the Divers. A Contribution to Sponge Diving in Antiquity***

KEYWORDS: Divers in Antiquity, Ancient Diving Techniques and Tools, Ancient Marine Practices, Eastern Mediterranean

ABSTRACT:

Sponges, among the oldest multicellular organisms on Earth, were vital resources in antiquity for uses ranging from hygiene to medicine, and beyond. Due to their natural underwater habitat, sponges could only be acquired through the specialised practice of sponge diving. Despite its significance, the sponge diving per se has received limited scholarly attention until recently. This research addresses this gap, by focusing on the eastern Mediterranean region, to uncover the methods, tools, and individuals involved in this highly skilled and challenging occupation. Drawing on diverse archaeological evidence, both direct and indirect, alongside ancient written sources, as well as modern ethnographical parallels, this study reconstructs the practice of sponge diving from its earliest evidence up to Roman times. Ultimately, this paper seeks to enrich the understanding of this underrepresented marine practice and illuminate the profound relationship between ancient societies and the underwater world.

36) **NAME:** MONA ALI MOSTAFA ABD ELAZIZ **EMAIL:** monaelhadidy40@gmail.com
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TITLE: ***The commercial Role of the Canopic Branch of the Nile and its Relationship with the Mediterranean Basin until the End of the Late Period***

KEYWORDS: Maritime Trade, Mediterranean Basin, River Ports, Canopic Branch

ABSTRACT:

The Canopic Branch has been flowing into the Mediterranean Sea for nearly 4500 years, and has remained active since the Early Dynastic Period until the late Roman Period in the fifth century AD. It is the oldest and largest of the extinct branches of the Nile in the western Delta and played an important role in the history of Egypt, as it remained for a long time the largest commercial navigation route in the Delta, and the oldest commercial stations and river ports were established on its course, which played an important role in trade exchange between Egypt and the cities of the Mediterranean Basin.

This research paper discusses the importance of the Canopic branch as a commercial and navigational passage and its role in linking Egypt to the Mediterranean basin with commercial relations that flourished greatly during the Late Period (664-332 BC). Naucratis emerged during that period as a large commercial city connected to the Mediterranean Sea via the Canopic branch, at the mouth of which on the Mediterranean coast were important ports in Heracleion and Canopus. This is evident from the huge number of sunken ships and ships at the site. Naucratis was a commercial station until

it was transformed into a warehouse and a great commercial port to which the oil and wine of Greece came and the wheat, tulle and wool of Egypt were sent. The Canopic branch also played an important role in the political and military aspects since the fifth and fourth centuries BC. The mouth of the Canopic branch on the Mediterranean coast was the main entrance and gate and the easiest and fastest way to reach the heart of Egypt. The Delta and the Canopic branch in particular witnessed important historical events as it occupies a strategic location at the entrance to the Nile River. The researcher used analytical and historical approaches, which are represented by direct evidence such as archaeological evidence from port docks, shipwrecks, hooks, pottery, etc., and indirect evidence represented by papyri and classical texts. From this we conclude the importance of the Canopic branch and the canals branching off from it and the ports located along its course and its role as a commercial navigation route linking Egypt with the countries of the Mediterranean basin.

37) **NAME:** SARAH AWWAD **EMAIL:** Sarahwagdy262@yahoo.com **AFFILIATION:** ALEXANDRIA CENTRE FOR MARITIME ARCHAEOLOGY & UNDERWATER CULTURAL HERITAGE

TITLE: ***The Contemporary Lacustrine Traditional Boats of Manzala and Burullus: Type, Adaptation and Continuity***

KEYWORDS: Lake Manzala, Lake Burullus, Wooden Sailboats, Boatbuilding

ABSTRACT:

Manzala and Burullus lakes are of great significance among the series of coastal lakes of the Nile Delta because the tradition of the life of their inhabitants is still tied to boats and they perform some of their daily duties depending on them. These lakes include a broad range of wooden working boats which came in many different types, shapes, sizes, and uses. Additionally, the operators of these boats gave a bewildering range of names to their traditional boats, which vary from one lake to another. In the present day, these boats still rely heavily on wind and human power for propulsion and steering them.

Throughout the 20th century, a few incomplete ethnographic and documentation studies have been conducted on some boats of Lakes Manzala and Burullus to investigate some types of these boats and their technical features, such as the ethnographic researches of James Hornell in1930 and Nessim Henein in 1991 to observe the boats of lake Manzala at the shores of Port Said city and Matariya town. in addition to the partial record of Lake Burullus traditional boats by Prof. Patrice Pomey at the beginning of the 21st century.

Further, some of these studies indicated the origins of some of these boats without reference to the other boats in the same lakes, in a permanent indication that all the boats of Manzala and Burullus lakes are the successor of the traditions of building Nile boats in different eras without providing a comprehensive vision about the causes and origins of this diversity in those boats. This paper discusses the types and equipment of the contemporary boats of Manzala and Burullus lakes, the reasons for that diversity, and potential origins, it also clarifies the changes that occurred in these boats. Moreover, this paper seeks to raise the awareness among local Egyptians of the importance of the riverine cultural heritage of the coastal lakes of the Nile Delta.

This paper relies on the preliminary results of the ethnographic study that is being conducted within the ongoing documentation project "Yadd_Baḥari" "بَحْرِيّ يَدّ" to record the tangible and intangible maritime cultural heritage of the traditional boats of Egyptian coastal lakes, funded by the Honor Frost Foundation.

38) **NAME:** THOMAS IOSSIFIDIS **EMAIL:** th.iossifidis@yahoo.gr **AFFILIATION:** UNIVERSITY OF THESSALY

TITLE: ***The Peculiar Naval Architecture of Cistern Boats***

KEYWORDS: Roman Tankers, Dolia, Shipbuilding

ABSTRACT:

Between the 1st century BC and the middle of the 2nd century AD, the cistern boats, the first liquid bulkers in history, were sailing to the Western and possibly to the Central and Eastern Mediterranean Sea distributing bulk wine. The shipbuilders of the cistern boats adapted the contemporary dominant techniques of naval architecture (shell-first method, mortise-and-tenons joinery) and added an unexampled shipbuilding innovation to build a boat vessel to be used for the transportation of large quantities of wine cargo. The product was stored in oversized ceramic vessels called dolia, which were installed in the central sector of the hull. Once, the dolia were set up in the boat's body, they became an integral and immobile part of the ship. It has been hypothesized that the stabilization of the dolia was achieved by a reinforced bulkhead-like hull structure. The cistern boats had flat bottoms, like the freshwater vessels, which allowed them to increase their storage capacity and presumably sail in shallow river waters. The incorporation of the watertight ceramic tanks and the augmented cargo capacity necessitated the hull reinforcement, by increasing the density of the ribs in the centre of the frame. The cistern boats constituted a shipbuilding innovation, that paved the way

for the future construction of larger and more massive liquid bulk carriers. The study of their construction reveals the high level of the Roman shipbuilding technical capacity and the sophisticated use and selection of timber.

39) **NAME:** LEAH TAVASI **EMAIL:** Kell6268@ox.ac.uk **AFFILIATION:** UNIVERSITY OF OXFORD

TITLE: ***An Analysis of Ancient Route Networks and Rock Art in the Eastern Egyptian desert***

KEYWORDS: Egypt, Rock Art, GIS, water

ABSTRACT:

The Nile valley and its delta are presently, as they were in antiquity, one of the most complex and intricate set of river systems in the world. From the Nile rose wealthy, technologically advanced, and powerful civilizations that supported irrigation, agriculture, and connectivity from its integrative set of river systems. One of the keys to their success was the navigation of the Eastern Egyptian Desert. Sandwiched between the Red Sea and the Nile, effective exploitation of water resources were crucial to survival in an otherwise inhospitable region.

This paper looks at reconstructed roads from the Roman and Hellenistic period available from documentary sources and combines them with identified rock art and water sources. Using ArcGIS Pro, Stream features are created and show the most likely potential water routes due to periodic flooding as well as where the water table would be most accessible. The optimal paths calculated show two distinct groups: first, an overall alignment between rock art and roads, and second, a group of sites that deviated from the optimal path. Optimal pathways are then presented between watering holes of these deviated sites to determine if they could be explained by missing data.

40) **NAME:** DAVIDE FALCO **EMAIL:** falco.davide83@gmail.com **AFFILIATION:** POLITECNICO DI BARI

TITLE: ***Urban Identity Forms in the Early Imperial Time: Seascapes and Images of the Harbours Cities in the Eastern Mediterranean***

KEYWORDS: Harbour Cities, Eastern Mediterranean, Urban Image, Ancient City Planning

ABSTRACT:

This paper investigates the monumental image of ancient harbours during the transition from the Hellenistic to the early Imperial period, with a focus on the Eastern Mediterranean. Through a comparative analysis of key sites—Rhodes, Kos, Ephesus, Alexandria, and Caesarea Maritima—the research assesses the role of harbour infrastructure in shaping the visual identity of ancient cities. The study draws on archaeological data to explore how ports, beyond their functional utility as trade and military hubs, contributed significantly to the symbolic landscape of urban centres. The harbours are examined within the broader urban system, highlighting how these structures influenced the perception of a city's power, prosperity, and cultural integration with the Greco-Roman world. The architectural features of the harbours—such as monumental breakwaters, lighthouses, and porticoes—are analysed to understand their aesthetic and practical impact on both local inhabitants and foreign visitors. By situating these harbours within their urban and regional contexts, the paper aims to analyse the evolving relationship between civic infrastructure and visual culture, underscoring how monumental harbour design served as a statement of identity and influence. Ultimately, this research contributes to a deeper understanding of the Eastern Mediterranean's cultural and architectural landscape, emphasizing the strategic and symbolic importance of harbours in the construction of urban identity during a period of significant political and cultural transformation.

41) **NAME:** KONSTANTINOS MERKOURIS **EMAIL:** k.merkouris@upatras.gr **AFFILIATION:** Laboratory of Marine Geology and Physical Oceanography, Department of Geology, University of Patras

TITLE: ***The Importance of Multi-level Mapping Methodology in Underwater Archaeological Survey and Documentation***

KEYWORDS: Underwater Archaeology, Remote sensing, Photogrammetry, Eastern Mediterranean

ABSTRACT:

The unique identity of submerged antiquities is defined by their type, construction material, and state of preservation, while they are distributed across various underwater environments, seabed types, and depths. This diversity presents challenges for the accurate exploration, mapping, and documentation of underwater cultural heritage sites. Addressing these complexities and effectively investigating these sites requires a structured methodology and an operational plan, leading to the detailed collection of data essential for subsequent archaeological interpretation. The multi-level mapping method plays a key role in this process, integrating various platforms and sensor technologies, including acoustic sensors like side-scan sonar, multi-beam/single-beam echosounders and sub-bottom profiler and visual sensors like cameras, to provide varied types of information. This approach allows for the detailed documentation of antiquities, facilitating the in-depth analysis of structural elements, spatial relations, and individual characteristics that might otherwise remain unnoticed. The present research aims to highlight the crucial importance of this methodology by examining representative examples of submerged archaeological sites in the Eastern Mediterranean region.

42) **NAME:** ELENI VASILEIOU **EMAIL:** evasiliou@culture.gr **AFFILIATION:** EPHORATE OF ANTIQUITIES OF IOANNINA

TITLE: ***The Lake Network of the Balkans and the Search for a Lakeside Settlement in the Ioannina Basin (Epirus)***

KEYWORDS: Lake Networks, Ioannina, the Balkans, Lakeside Settlements

ABSTRACT:

The Ioannina basin, located in the Region of Epirus, is characterised by the presence of Lake Pamvotis (=the one that nourishes everyone), which is the second oldest at the European level. The first written reference to it dates from the 12th century (Commentary on the Odyssey of Eustathius of Thessalonica). The earliest evidence of human activity in the Ioannina basin is attested at the Paleolithic cave of Kastritsa, next to the old bank of the lake. In recent years, investigations have brought to light a significant number of ancient sites in the area from the Neolithic period to Late Antiquity. However, until now – surprisingly – no remains of a pile-dwelling settlement have been identified in the wider region.

To this end, this paper attempts, through the presentation of the known lakeside settlements from the region of the Balkans and of all the currently available data (historical, geomorphological, and archaeological) from the Ioannina basin, to outline the possible reasons for the 'absence' of a wetland habitation there. However, is it a real 'absence'? Or a result of inadequate research? The area is still under study, and recently more sites have been discovered. Thus, the proposed assumptions are open to discussion.

43) **NAME:** MAX ŠÁMAL - RADOMÍR TICHÝ **EMAIL:** max.samal@post.cz - tichy.radomir.tichy@gmail.com **AFFILIATION:** CHARLES UNIVERSITY PRAGUE - UNIVERSITY OF HRADEC KRÁLOVÉ

TITLE: The Monoxylon Expeditions: A nautical archaeological experiment

KEYWORDS: Monoxylon Expedition, Seafaring, Boatbulding, Experimentation

ABSTRACT:

Recently, boats dug from single tree trunks found in Lake Bracciano near Rome were classified, on the basis of their morphology, as boats suitable for sea navigation and therefore fundamental for the process of the Neolithisation in the Mediterranean. Such possibilities were considered not only because of the size of Boat 1 from this site but also because of other wooden artefacts found in the surrounding area. It is also useful to compare the practical results with the suppositions about the Bracciano boats.

The aim of this paper is to present the starting points of the archaeological experiment named Expedition Monoxylon IV. The expedition, which took place in 2023, was an experiment with a replica of a dugout boat in the Aegean Sea. It followed a series of earlier experiments (1995, 1998, 2019), one of which took place in the western Mediterranean. Knowledge of the nautical characteristics of the three vessels and also their crews was gradually gained. The previous tests improved not only the replica but also our knowledge of its behaviour at sea. The 2023 experiment became the pinnacle of the expeditions. The aim of the nautical experiment was to evaluate the characteristics of the replica of Boat 1 from the Early Neolithic site at Bracciano Lake. The speed while paddling under normal conditions reached up to 5.5km/hour. Sail use increased the vessel's speed up to 7 km/hour.

44) **NAME:** HASSAN HAJJALI **EMAIL:** ha.hajjali@hotmail.com **LEVEL: AFFILIATION:** HONOR FROST FOUNDATION

TITLE: ***Impact of the 2024 War on Built Cultural Heritage in South Lebanon and the Bekaa Valley: Protection, Documentation, and Future Precautions***

KEYWORDS: Built Cultural Heritage, War Impact, International Legislation, Preservation Measures

ABSTRACT:

The 2024 war in Lebanon has greatly affected the built cultural heritage in the South and Bekaa regions, including ancient mosques, churches, historical buildings, archaeological sites, and the World Heritage Sites of Tyre and Baalbek. This paper examines the extent of the destruction and evaluates the effectiveness of international and national measures in protecting these invaluable sites. The study highlights the role of international legislation, particularly the 1954 Hague Convention and its Second Protocol, in safeguarding cultural heritage during armed conflicts. It also assesses the actions taken by UNESCO, the Lebanese government, and non-governmental organisations (NGOs) in protecting these sites. Furthermore, the paper explores the documentation and monitoring efforts conducted before and after the war, emphasising the importance of accurate records for effective preservation. The need for comprehensive risk assessments and emergency planning to mitigate future threats is underscored, aiming to contribute to the preservation of both Lebanese and universal cultural values.