

## Archeologia Subacquea

*The nEU-Med project is part of the Horizon 2020 programme, in the ERC Advanced project category. It began in October 2015 and will be concluded in October 2020. The University of Siena is the host institution of the project. The project is focussed upon two Tuscan riverine corridors leading from the Gulf of Follonica in the Tyrrhenian Sea to the Colline Metallifere. It aims to document and analyze the form and timeframe of economic growth in this part of the Mediterranean, which took place between the 7th and the 12thc. Central to this is an understanding of the processes of change in human settlements, in the natural and farming landscapes in relation to the exploitation of resources, and in the implementation of differing political strategies. This volume brings together the research presented at the first nEUmed workshop, held in Siena on 11–12 April, 2017. The aim of the workshop was to draw up an initial survey of research and related work on the project, one and a half years after its inception. The project is composed of several research units. Each unit covers an aspect of the interdisciplinary research underpinning the nEU-Med project, each with their own methodology. For this first volume of results, it was decided not to give an account of all the work carried out within all the units, but to select those lines of investigation which, at the end of the first year and a half, have made it possible to articulate and develop an interdisciplinary research strategy.*

*This book is the first collection on Roman toilets of the northwestern provinces, and gives a good overview of the possibilities for human waste removal in Roman times. The volume provides a fascinating introduction to this under-researched group of Roman installations.*

*Celebrating the theme 'Shared heritage', this volume presents the peer-reviewed proceedings from IKUNA6 (the 6th International Congress for Underwater Archaeology, Fremantle 2016). Papers offer a stimulating diversity of themes and niche topics of value to maritime archaeology practitioners, researchers, students, museum professionals and more.*

*The study of landscape has in recent years been a field for considerable analytical archaeological experimentation. Although the Mediterranean is the home of classicism, it has seen the implementation of projects of this new kind, and in regions of Spain and Italy, after some delay, the proliferation of landscape archaeology studies.*

*Corrosion and conservation of cultural heritage metallic artefacts*

*Religion in Republican Italy*

*Proceedings of the Tenth International Symposium on Boat and Ship Archaeology, Denmark 2003*

*Dictionary of Bibliographic Abbreviations Found in the Scholarship of Classical Studies and Related Disciplines*

*Connected by the Sea*

*A 16th century Venetian merchantman from Mljet, Croatia*

Russell provides an examination of the production, distribution, and use of carved stone objects in the Roman world. Focusing on the market for stone and its supply, he offers an assessment of the practicalities of stone transport and how the relationship between producer and customer functioned even over considerable distances.

Drawing on documentary sources and archaeological evidence this book offers a socio-economic history of elite villas in Roman Central Italy and brings a new perspective to the debate on the slave-based villa system and the crisis of Italian villas in the imperial period.

The conservation of metallic archaeological and historic artefacts is a major challenge whether they are ancient bronzes or relics of our more recent industrial past. Based on the work of Working Party 21 Corrosion of Archaeological and Historical Artefacts within the European Federation of Corrosion (EFC), this important book summarises key recent research on a and preventing the corrosion of cultural heritage metallic artefacts. After an introductory part on some of the key issues in this area, part two reviews the range of analytical techniques for measuring and analysing corrosion processes, including time resolved spectroelectrochemistry, voltammetry and laser induced breakdown spectroscopy. Part three reviews different part four discusses on-site monitoring techniques. The final part of the book summarises a range of conservation techniques and strategies to conserve cultural heritage metallic artefacts. Corrosion and conservation of cultural heritage metallic artefacts is an important reference for all those involved in archaeology and conservation, including governments, museums and conservators.

Corrosion science: Summarises key research on analytical techniques for measuring and analysing corrosion processes Provides detailed understanding of corrosion processes and corrosion prevention Discusses on-site monitoring techniques

The legendary overland silk road was not the only way to reach Asia for ancient travelers from the Mediterranean. During the Roman Empire's heyday, equally important maritime routes reached from the Egyptian Red Sea across the Indian Ocean. The ancient city of Berenike, located approximately 500 miles south of today's Suez Canal, was a significant port among archaeologist who excavated Berenike, uncovers the role the city played in the regional, local, and "global" economies during the eight centuries of its existence. Sidebotham analyzes many of the artifacts, botanical and faunal remains, and hundreds of the texts he and his team found in excavations, providing a profoundly intimate glimpse of the people who lived, worked, and traded in the Mediterranean world and Asia.

Proceedings of the Roman Amphora Contents International Interactive Conference (RACIIC) (Cadiz, 5-7 October 2015)

Integration and connectivity c. 150-70 BC

Mediterranean Landscapes in Post Antiquity

Berenike and the Ancient Maritime Spice Route

International Handbook of Underwater Archaeology

Homeric Seafaring

In 2007 a symposium was held at Texas A&M University to celebrate the twenty-fifth anniversary of Texas A&M University Press's publication of the first volume reporting the Yassiada shipwreck site. Seventeen papers from that symposium featured in this book broadly illustrate varied topics as ships and seafaring life, maritime trade, naval texts, commercial cargoes, and recent developments in the analysis of the Yassiada ship itself.

Based on the proceedings of a workshop held at Seville University in 2015, this book looks at several series of amphorae created in the Late Republican Roman period, sharing a generally ovoid shape in their bodies – a group of material which, until now, has rarely been studied.

International Handbook of Underwater ArchaeologySpringer Science & Business Media

Between 2007 and 2012 the Department for Underwater Archaeology of the Croatian Preservation Institute from Zagreb and the Department of Humanistic Studies of the Ca' Foscari University of Venice collaborated in the recording, underwater excavation and analysis of the unusually well-preserved wreck of a 16th century Venetian merchantman in the Sveti Pavao shallow off the southern shore of the island of Mljet, Croatia. The shipwreck preserved many personal possessions of the crew as well as a number of bronze artillery pieces and the remains of a cargo of luxury and richly decorated ceramic material from Iznik and other oriental workshops. Although the excavation is not complete, this volume presents the results of the project so far. The methodological and technical aspects of the underwater investigation of the site, mainly by photogrammetry, are described: the historical and archaeological context of navigation in the late Medieval period in the eastern Mediterranean discussed; and the recovered artefacts described and catalogued in detail, together with the remains of the ship and its equipment that, because of depth and of problems of conservation, have been left in situ. The conservation and restoration of the finds are described in an appendix.

A Social and Economic History

Harvesting the Sea

APM - Archeologia Postmedievale, 18, 2014 - Archeologia dei relitti postmedievali / Archeology of Post-Medieval Shipwrecks

Local Economies?

Building for Eternity

Roman Villas in Central Italy

This chapter deals with the description of suitable and innovative solutions devoted to preserve metallic artefacts in their original contexts, underwater cultural heritage sites of archaeological and historical interest, as well as with the analysis of the degradation processes of ferrous and non-ferrous artefacts induced by contact with an aggressive environment such as sea water. The chapter also provides an overview of the most common conservation strategies applied to recovered artefacts.

The Oxford Handbook of Maritime Archaeology is a comprehensive survey of the field at a time when maritime archaeology has established itself as a mature branch of archaeology. This volume draws on the expertise of nearly fifty international scholars who examine the many distinct and universal aspects of the discipline.

This concise dictionary is intended to be helpful in the reading of archaeological books and publications, and in the writing of papers and articles in both English and Italian.

Il volume riporta gli interventi del VIII Ciclo di Lezioni organizzato dall'Università di Siena sulla Ricerca applicata in Archeologia. I testi riescono a riassumere la complessità dell'archeologia subacquea, l'ampiezza e l'articolazione di temi e di problemi affrontati, la variabilità degli ambienti e dei contesti in cui la ricerca si svolge, di fatto unificati solo dall'unico comune denominatore costituito dall'acqua. Quindi non solo archeologia sottomarina, ma archeologia subacquea tout-court, dai fiumi, dei laghi, degli insediamenti sommersi, dei porti, archeologia e architettura navale, ecc. Il tutto con un ampio spettro cronologico, dalla preistoria all'età moderna. Le sezioni in cui è articolato il volume consentono di approfondire da un lato la situazione sui fondamenti e sullo stato della disciplina, l'approfondimento del suo statuto teorico e l'analisi delle procedure, delle metodologie e delle tecniche impiegate, dall'altro l'analisi dell'uso storico dei dati acquisiti nel corso delle ricerche archeologiche, e infine gli aspetti legislativi e tecnico-burocratici.

Lusitanian Amphorae: Production and Distribution

28 November–2 December 2016, Western Australian Maritime Museum Fremantle, Western Australia

From artifact to historical site

Trade, Commerce, and the State in the Roman World

Between the last two centuries of the Republic and the early days of the Roman Empire

The Oxford Handbook of Maritime Archaeology

Although underwater archaeology has assumed its rightful place as an important subdiscipline in the field, the published literature has not kept pace with the rapid increase in the number of both prehistoric and historic underwater sites. The editors have assembled an internationally distinguished roster of contributors to fill this gap. The book presents geographical and topical approaches, and focuses on technology, law, public and private institutional roles and goals, and the research and development of future technologies and public programs.

One marker of the majesty of ancient Rome is its surviving architectural legacy, the stunning remains of which are scattered throughout the circum-Mediterranean landscape. Surprisingly, one truly remarkable aspect of this heritage remains relatively unknown. There exists beneath the waters of the Mediterranean the physical remnants of a vast maritime infrastructure that sustained and connected the western world's first global empire and economy. The key to this incredible accomplishment and to the survival of structures in the hostile environment of the sea for two thousand years was maritime concrete, a building material invented and then employed by Roman builders on a grand scale to construct harbor installations anywhere they were needed, rather than only in locations with advantageous geography or topography. This book explains how the Romans built so successfully in the sea with their new invention. The story is a stimulating mix of archaeological, geological, historical and chemical research, with relevance to both ancient and modern technology. It also breaks new ground in bridging the gap between science and the humanities by integrating analytical materials science, history, and archaeology, along with underwater exploration. The book will be of interest to anyone interested in Roman architecture and engineering, and it will hold special interest for geologists and mineralogists studying the material characteristics of pyroclastic volcanic rocks and their alteration in seawater brines. The demonstrable durability and longevity of Roman maritime concrete structures may be of special interest to engineers working on cementing materials appropriate for the long-term storage of hazardous substances such as radioactive waste. A pioneering methodology was used to bore into marit structures both on land and in the sea to collect concrete cores for testing in the research laboratories of the CTG Italcementi Group, a leading cement producer in Italy, the University of Berkeley, and elsewhere. The resulting mechanical, chemical and physical analysis of 36 concrete samples taken from 11 sites in Italy and the eastern Mediterranean have helped fill many gaps in our knowledge of how the Romans built in the sea. To gain even more knowledge of the ancient maritime technology, the directors of the Roman Maritime Concrete Study (ROMACONS) engaged in an ambitious and unique experimental archaeological project Ð the construction underwater of a reproduction of a Roman concrete pier or pila. The same raw materials and tools available to the ancient builders were employed to produce a reproduction concrete structure that appears to be remarkably similar to the ancient one studied during ROMACONS's fieldwork between 2002-2009. This volume reveals a remarkable and unique archaeological project that highlights the synergy that now exists between the humanities and science in our continuing efforts to understand the past. It will quickly become a standard research tool for all interested in Roman building both in the sea and on land, and in the history and chemistry of marine concrete. The authors also hope that the data and observations it presents will stimulate further research by scholars and students into related topics, such as the history and technology of Roman Concrete Engineering in the Sea

A History of Fishing
The Oxford Handbook of Engineering and Technology in the Classical World
Sveti Pavao Shipwreck
Rome and the north-western Mediterranean
The broad valley of the Bradano river and its tributary, the Basentello, separates the Apennine mountains in Lucania from the limestone plateau of the Murge in Apulia in southeast Italy. This book aims to explain how the pattern of settlement and land use changed in the valley over the whole period from the Neolithic to the late medieval. Described here are the origin and general trends in the development of fishing from the earliest times up to the present in various parts of the world. The techniques applied and the economic and social problems involved are covered. Fishing methods have not changed much since the Stone Age, but continuous technical improvements like the construction of sea-worthy ships, more efficient gear and high fish production of now 100 million tons per year. Extensive utilization has caused heavy overexploitation of the resources and consequently growing concern. The book concludes with an evaluation of perspectives for the future utilization of living resources. The Oxford Handbook of Animals in Classical Thought and Life is the first comprehensive guide to animals in the ancient world, encompassing all aspects of the topic by featuring authoritative chapters on 33 topics by leading scholars in their fields. As well as an introduction to, and a survey of, each topic, it provides guidance on further reading for those who wish to study a particular area in more depth. The treatment of animals in ancient times are covered in chapters which explore the domestication of animals, animal husbandry, animals as pets, Aesop's Fables, and animals in classical art and comedy, all of which closely examine the nature of human-animal interaction. More abstract and philosophical topics are also addressed, including animal communication, early ideas on the origin of species, and the occupation of the territories on both sides of the Rhine was an enormous logistical challenge for the Roman military administration. This book provides an in-degth study of the amphorae from Neuss, providing further understanding of the local area and the logistics of the Roman army and its supply from very distant areas.

IKUWA6. Shared Heritage: Proceedings of the Sixth International Congress for Underwater Archaeology

Maritime Studies in the Wake of the Byzantine Shipwreck at Yassiada, Turkey

New frontiers and new perspectives

Proceedings of the Ninth International Symposium on Boat and Ship Archaeology, Venice 2000

Latrinae: Roman Toilets in the Northwestern Provinces of the Roman Empire

L'archeologia subacquea (Napoli)

***First comprehensive study of Italy's "art police", an organisation devoted to protecting cultural artefacts.***

***The 10th International Symposium on Boat and Ship Archaeology was held in Roskilde, Denmark in 2003. The theme of the meeting was "Connected by the Sea", and was designed to emphasize the role of the sea, seafaring and watercraft as bridges rather than barriers. Maritime archaeology tends to take place within national borders, with a national focus, yet the very premise of seafaring is the desire to travel beyond the horizon to establish contact with other places and cultures. The conference theme was chosen to encourage the maritime archaeological community to think in international terms.***

***More than a century of archaeological investigation in Portugal has helped to discover, excavate and study many Lusitanian amphorae kiln sites, with their amphorae being widely distributed in Lusitania.***

***This volume presents eighteen papers by leading Roman historians and archaeologists discussing trade in the Roman Empire during the period c.100 BC to AD 350. It focuses especially on the role of the Roman state in shaping the institutional framework for trade within and outside the empire, in taxing that trade, and in intervening in the markets to ensure the supply of particular commodities, especially for the city of Rome and for the army. As part of a novel interdisciplinary approach to the subject, the chapters address its myriad facets on the basis of broadly different sources of evidence: historical, papyrological, and archaeological. They are grouped into three sections, covering institutional factors (taxation, legal structures, market regulation, financial institutions); evidence for long-distance trade within the empire in wood, stone, glass, and pottery; and trade beyond the frontiers, with the east (as far as China), India, Arabia, the Red Sea, and the Sahara. Rome's external trade with realms to the east emerges as being of particular significance, but it is in the eastern part of the empire itself where the state appears to have adapted the mechanisms of taxation in collaboration with the elite holders of wealth to support its need for revenue. On the other hand, the price of that collaboration, which was in effect a fiscal partnership, ultimately led to the longer term in slightly different forms in the east and the west to a fundamental change in the political character of the empire.***

***Origins of a new economic union (7th-12th centuries). Preliminary results of the nEU-Med project: October 2015-March 2017***

***Sensing the Past***

***The Ovoid Amphorae in the Central and Western Mediterranean***

***Saving the World's Heritage***

***The Carabinieri Command for the Protection of Cultural Property***

***Fields, Farms and Colonists***

***To date, Rome's intervention to the West from the mid-second century BC has not really been looked at with any sense of overview. Instead, there has been an unconnected series of micro-regional studies looking at particular areas, from the river Ebro in Spain round to Italy on the land front, and from the Balearic Islands to Corsica, Sardinia and even Sicily as regards the seaborne aspect. In contrast, the aim of this volume is to push the historical and archaeological debates about Rome's expansion beyond these traditional geographical boundaries and the discipline-based previous research. The entire north-western Mediterranean is treated as a micro-region and is addressed using various interdisciplinary approaches. The result is to provide an innovative and comprehensive overview of the north-western Mediterranean in a period of historical crossroads, aided particularly by focusing on the connectivity and integration within this region as two interrelated issues. While Republican Rome enforced itself as an expansive power towards the West, all sorts of polities, military operations and individuals also played a significant role in creating interconnectivity and integration of the north-western Mediterranean into a new hybrid reality. In order to uncover such processes of hybridisation, contributors to this volume were encouraged to focus on the historical, archaeological and numismatic material from several areas within the region, and to incorporate aspects of interdisciplinary methodologies in order to address the region's military, political, social and economic interconnections with Italy, Rome and each other within the overall period.***

***Marzano explores the exploitation of marine resources in the Roman world and its role within the economy. Bringing together literary, epigraphic, archaeological, and legal sources, she shows that these marine resources were an important feature of the Roman economy and paralleled phenomena taking place in the Roman agricultural economy on land.***

***This comprehensive study of Homer's references to ships and seafaring reveals patterns in the way that Greeks built ships and approached the sea between 850 and 750 B.C. The subjects of this study, which are partly historical, partly archaeological, and partly myth and legend, bring Mark to several surprising conclusions about seafaring in Homer's time***

***This volume fills a gap in the study of an important, yet neglected case of state formation, by taking a landscape perspective to Etruria. Simon Stoddart examines the infrastructure, hierarchy/heterarchy and spatial patterns of the Etruscans over time to investigate their political development from a new perspective. The analysis both crosses the divide from prehistory to history and applies a scaled analysis to the whole region between the Tyrrhenian Sea and the Arno and Tiber rivers, with special focus on the neglected region between Populonia on the coast and Perugia and the north Umbrian region adjoining the Apennines. Stoddart uncovers the powerful places that were in dynamic tension not only between themselves, but also with the internal structure constituted by the descent groups that peopled them. He unravels the dynamically changing landscape of changing boundaries and buffer zones which contained robust urbanism, as well as less centralized, polyfocal nucleations.***

***The Economics of the Roman Stone Trade***

***The Spatial Dynamics of a Mediterranean Civilization, 1200–500 BC***

***The Exploitation of Marine Resources in the Roman Mediterranean***

***Production and Exchange of Inland Regions in Late Antiquity***

***The Oxford Handbook of Animals in Classical Thought and Life***

***Boats, Ships and Shipyards***

This book explores how recent findings and research provide a richer understanding of religious activities in Republican Rome and contemporary central Italic societies, including the Etruscans, during the period of the Middle and Late Republic. While much recent research has focused on the Romanization of areas outside Italy in later periods, this volume investigates religious aspects of the Romanization of the Italian peninsula itself. The essays strive to integrate literary evidence with archaeological and epigraphic material as they consider the nexus of religion and politics in early Italy; the impact of Roman institutions and practices on Italic society; the reciprocal impact of non-Roman practices and institutions on Roman custom; and the nature of 'Roman', as opposed to 'Latin', 'Italic', or 'Etruscan', religion in the period in question. The resulting volume illuminates many facets of religious praxis in Republican Italy, while at the same time complicating the categories we use to discuss it.

In this study, the author addresses two important issues in Roman archaeology. On the basis of a comparison of intensive field surveys in different parts of the Pontine region, central Italy, it is argued that detailed site and off-site collection strategies have much to offer in understanding site chronology and land use patterns. Setting the field survey data in a wider geographical and historical context, the author also explores the context and impact of the foundation of Roman colonies and rural tribes on rural settlement systems, as such contributing to current debates on the nature of early Roman colonization.

This book provides a complete overview of novel and state of art sensing technologies and geotechnologies relevant to support management and conservation of CH sites, monuments and works of art. The book is organized in an introduction stating the motivations and presenting the overall content of the volume and four parts. The first part focuses on remote sensing and geophysics for the study of human past and cultural heritage at site scale and as element of the surrounding territory. The second part presents an overview of non invasive technologies for investigating the monuments and works of art. The third part presents the new opportunities of ICT for an improved and safe cultural heritage fruition, from the virtual and augmented reality of historical context to artifact tracking. Finally, the fourth part presents a significant worldwide set of success cases of the exploitation of the integration of geotechnologies in archeology and architectural heritage management. This book is of interest to researchers, experts of heritage science, archaeologists, students, conservators and other professionals of cultural heritage.

From sewn planked boats in Early Dynastic Egypt to Late Roman wrecks in Italy, and the design of Venetian Merchant Gallies, this huge volume gathers together fifty-three papers presenting new research on the archaeology and history of ancient ships and shipbuilding traditions. The papers have been grouped into several thematic sections, including: ships of the Mediterranean; the reconstruction of ancient ships, from life-size reconstructions to computer models; the study of shipyards, shipsheds and shipways of the Mediterranean and Europe; Gannet Gallies of the 15th and 16th centuries; and North European medieval and post-medieval ships. These papers which were presented at the Ninth International Symposium on Boat and Ship Archaeology (ISBSA), held in Venice 2000. Carlo Beltrame is a free-lance archaeologist and contract professor of Maritime archaeology at Università Ca' Foscari of Venice and of Naval archaeology at Università della Tuscia of Viterbo. He specialises in the archaeology of ship-construction from antiquity until the Renaissance period and methodology in maritime archaeology.

Roman Amphorae in Neuss: Augustus to Julio-Claudian Contexts

12. Underwater corrosion of metallic heritage artefacts

Power and Place in Etruria

Archaeology on the Apulian – Lucanian Border

Archeologia subacquea

Archeologia subacquea - Come opera l'archeologo sott'acqua. Storie dalle acque. VIII Ciclo di Lezioni sulla ricerca applicata in Archeologia (Certosa di Pontignano 1996)

Offers an updated list of bibliographic abbreviations in the field of Classical Studies.

Presents the results of the RACIIC International Congress (Roman Amphora Contents International Interactive Conference, Cá diz, 2015), dedicated to the distinguished Spanish amphorologist Miguel Beltrán Lloris. This volume aims to reflect on the current state of knowledge about the palaeocontexts of Roman amphorae.

Long-distance trade under Rome is well-understood. But the importance of local exchange has not been fully explored. The volume investigates how inland regions could become prosperous in late antiquity, especially when not integrated in long-range trading networks. Robust local economies emerge, stimulated by both taxation and local market systems.

Corrosion and Conservation of Cultural Heritage Metallic Artefacts

Roman Amphora Contents: Reflecting on the Maritime Trade of Foodstuffs in Antiquity (In honour of Miguel Beltrán Lloris)

Dictionary of Archaeological Terms: English – Italian/ Italian – English

Intensive Field Survey and Early Roman Colonization in the Pontine Region, Central Italy