

# SHIPSHEDS OF THE ANCIENT MEDITERRANEAN

This is the first detailed and comprehensive study of the shipshed complexes which housed the great fleets of the Greco-Roman world, including Athens and Carthage. These complexes represented some of the largest and most expensive building projects of antiquity, and the volume provides a comprehensive survey of the archaeological and literary evidence for them. It explains how the buildings were carefully designed to keep warships dry and out of reach of shipworm, whilst enabling them to be launched quickly, easily and safely when required. It also serves as a handbook for archaeologists who may excavate such buildings, which are often difficult to interpret. The analytical chapters are complemented by a full and detailed catalogue of known sheds, with plans for all the major sites specially drawn for easy comparison. The book thus provides an indispensable guide for all those interested in these buildings and in the maritime infrastructure of the ancient world.





# SHIPSHEDS of the ANCIENT MEDITERRANEAN

DAVID BLACKMAN

AND

BORIS RANKOV

AND
KALLIOPI BAIKA
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This book is dedicated to the memory of

JOHN SINCLAIR MORRISON
(1913-2000)

and

JOHN FRANCIS COATES
(1922-2010)





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### ABOUT THE AUTHORS

DAVID BLACKMAN has been carrying out and publishing research on ancient harbours for over forty years; as a postgraduate student he provided an analysis of the then known remains of ancient shipsheds (published in 1968 in Morrison and Williams' *Greek Oared Ships*), which were one key factor in the design of the *Olympias* trireme reconstruction. The present book is a culmination of that work. In 1997 he became Director of the British School at Athens, and he has been based in Oxford since 2002.

BORIS RANKOV is Professor of Ancient History at Royal Holloway, University of London. In 1987 he recruited the first trials crew of 170 rowers to operate the *Olympias* trireme reconstruction, and he was one of the rowing masters on the ship in 1988, 1990 and 1992. In 1996, he succeeded John Morrison as Chairman of the Trireme Trust, and he subsequently co-authored the second edition of *The Athenian Trireme* (Cambridge, 2000). Alongside work on the Roman army and its epigraphy, ancient oared ships have remained a focus of his research and publication, including *Trireme Olympias: The Final Report* (2012) and the present volume.

KALLIOPI BAIKA has a Ph.D. from the University of Paris I (Panthéon-Sorbonne). She has worked at Royal Holloway, University of London, has been Visiting Lecturer in Maritime Archaeology at the University of the Peloponnese and is now a maritime archaeologist at the Ephorate of Underwater Antiquities in the Hellenic Ministry of Culture. She specializes in Greek harbour archaeology and coastal geoarchaeology in the Aegean and Mediterranean.

HENRIK GERDING has a Ph.D. in Classical Archaeology and Ancient History from Lund University. He has worked at Royal Holloway, University of London and Uppsala University, and is now Senior Lecturer in Classical Archaeology and Ancient History at Lund University. His research has been mainly on ancient architecture, and his published works include a monograph on the tomb of Caecilia Metella outside Rome.

JUDITH S. MCKENZIE is the author of *The Architecture of Alexandria and Egypt 300 BC-AD 700* (2007), *The Architecture of Petra* (1990) and, with the team she directed, co-author of *The Nabataean Temple at Khirbet et-Tannur, Jordan, Volume 1. Architecture and Religion* and *Volume 2. Cultic Offerings, Vessels, and Other Specialist Reports* (2013). Her additional knowledge of Greek architecture, and her experience analysing poorly preserved buildings (such as the Alexandrian Serapeum, *Journal of Roman Studies* 2004), as well as rock-cut structures, were useful for studying shipsheds. She is University Research Lecturer in Oriental Studies, a member of the Faculty of Classics, Oxford University, and director of the open-access Manar al-Athar photo-archive.

JARI PAKKANEN is Senior Lecturer in Classical Archaeology at Royal Holloway, University of London, and has been a co-Director of the Shipsheds Project. He specializes in Greek architecture, and from summer 2013 is the Director of the Finnish Institute at Athens.

#### **FOREWORD**

This book has been a long time in gestation. Blackman first became interested in the subject as a schoolboy when his classics master, John P. Morrison, arranged for his friend John S. Morrison (JSM) to come to his school to lecture about the ancient trireme, bringing his model of the proposed midships section. Later Blackman was one of JSM's last students at Trinity College, Cambridge; and when JSM went off to build colleges (and a trireme) he encouraged Blackman to start his postgraduate research by looking at the evidence provided by shipsheds for the dimensions of the trireme – the result appeared in *Greek Oared Ships* in 1968. Rankov was also brought to the trireme by JSM, albeit at a much later date, when he was idly admiring the full-scale trial section of a reconstruction which John F. Coates (JFC) had designed for JSM and which had been put on display at the 1985 Henley Royal Regatta. Within half an hour, JSM had persuaded Rankov to recruit a crew to row the ship (named Olympias) once she herself had been built, and the trireme has been central to his academic interests and research ever since. Our collaboration in the present volume is thus a logical, almost inevitable, product of this joint legacy.

The ever-increasing amount of archaeological evidence for shipsheds, especially in recent years, nevertheless meant that the project would have been too large for the two of us to tackle alone without the financial support provided by a grant of almost £250,000 from the Leverhulme Trust. This enabled us and our co-director, Jari Pakkanen, to employ a total of three research assistants: Henrik Gerding from 2003 to 2004; his successor Judith McKenzie from 2004 to 2006; and Kalliopi Baika from 2003 to 2006; over the same period, the grant also funded a Ph.D. dissertation by Bjørn Lovén, supervised by Rankov and Pakkanen at Royal Holloway, University of London, on 'The Zea shipsheds – topography and architecture'. We here express our sincere thanks to the Leverhulme Trust, without which

the project could not have been undertaken and this volume could not have been written.

We have also throughout received moral support and expert technical advice from the Trireme Trust, which was set up by JSM, JFC and the writer and businessman Frank Welsh in 1982 to research and reconstruct the ancient trireme. Although JSM himself died in 2000 before the current project was conceived, JFC continued to provide oral and written comments until his death in 2010; the latter's mantle as technical advisor was taken up by his friend and colleague Doug Pattison, like JFC a former Chief Naval Architect to the British Ministry of Defence. With a generous subvention from the Morrison family, the Trireme Trust also put on a workshop/conference for the project at Christ Church, Oxford in 2005, where we were able to present our early findings to most of the leading excavators and researchers into ancient Mediterranean shipsheds, provoking a great deal of fruitful discussion which is reflected in one way or another throughout this

We have owed much to the encouragement and helpful criticism of Henry Hurst and Antoinette Hesnard, who have excavated sheds at Carthage and Marseilles, respectively, and later of Joe and Maria Shaw, who identified the Minoan sheds at Kommos on Crete. Blackman remembers his years of co-operation with Paul Knoblauch, whose punctilious attention to detail is revealed in the quality of his plans of Rhodes. Nic Flemming provided us with much material from his discoveries made while he searched for evidence of sea level change all over the Mediterranean; we owe knowledge of one site to another geomorphologist, Marco Anzidei. Maria Costanza Lentini gave Blackman the opportunity to excavate with her all that remains of an ancient dockyard at Naxos in Sicily. Catherine Bouras provided many comments and much helpful information. Erik Hallager gave us important help, support and

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#### FOREWORD

advice at a crucial juncture. Lazaros Kolonas has maintained a dialogue with us for some years now, concerning his important site, Oiniadai; he arranged for us all to visit the shipshed remains, and provided the splendid photograph which serves as our cover image. Maria Petritaki has kindly guided Blackman and Baika over her excavations at Munychia. Levent Zoroğlu has helped us with information about his important site, Kelenderis, which sadly we have not been able to visit. V. Petrakos, A. Yiannikouri, C. Delaporta, S. Samartzidou and A. Simossi have helped Blackman with encouragement and permits over the years. To others we owe our gratitude for provision of information and photographs or plans, some in advance of final publication, notably: B. Basile, M. A. Cau, S. Feuser and F. Pirson, M. Francis-Allouche, M. Gras, E. Greco, M. Guy, G. Hadas, W. Held, S. Keay, N. Karamalingki, P. Kenrick, H. Lohmann, J.-P. Misson, P. J. Rhodes, A. Tsaravopoulos, P. Valavanis, A. Vasilakis and M. Yon. Many more are acknowledged in the text, notes and captions. We thank them all, and we hope that in return our book will be of help to them in their current and future work. We are aware that this book is only a stage in the study of ancient shipsheds, and we welcome information on new discoveries.

Our special thanks are due to Michael Sharp and Elizabeth Hanlon at Cambridge University Press for their encouragement and patience, to Jodie Hodgson, Tom O'Reilly and Fran Brown for their efficiency and helpfulness, and to the anonymous readers for Cambridge University Press for their helpful comments.

We thank all the members of our Project team (and their spouses/partners) for their collaboration over the years; and especially our own wives, Anne and Kati, who have lived patiently with this book throughout its long genesis.

Finally, the dedication of this book once again tries to express the debt we owe to John Morrison and John Coates for their inspiration and encouragement. We hope that it will be thought a worthy memorial, and we like to think that they would have enjoyed reading it.

David Blackman, *Headington Quarry* Boris Rankov, *Wootton-by-Woodstock* 12 December 2012



# **ABBREVIATIONS**

Abbreviations in the volume follow the Oxford Classical Dictionary, with the exception of the following journal title abbreviations:

ΑD Αρχαιολογικόν δελτίον. Μελέτες/Χρονικά

AEph 'Άρχαιολογική ἐφημερίς: περιοδικόν τῆς ἐν 'Αθήναις 'Άρχαιολογικῆς

Έταιρείας

DossArch Les Dossiers de l'Archéologie

IJNA The International Journal of Nautical Archaeology PAAH Πρακτικὰ τῆς ἐν Ἀθήναις Ἀρχαιολογικῆς Ἑταιρείας

#### MAPS



MAP 1 The Mediterranean

#### MAPS



MAP 2 Italy

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#### MAPS



MAP 3 Greece and the western coast of Asia Minor

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