The Archaeology of Seafaring in Ancient South Asia

Prior to European expansion, communities of the Indian subcontinent had a strong maritime orientation. In this new archaeological study, Himanshu Prabha Ray explores seafaring activity, religious travel and political economy in this ancient period. By using archaeological data from the Red Sea to the Indonesian archipelago, she reveals how the early history of peninsular South Asia is interconnected with that of its Asian and Mediterranean partners in the Indian Ocean region. The book departs from traditional studies, focussing on the communities’ maritime history rather than agrarian expansion and the emergence of the state. Rather than being a prime mover in social, economic and religious change, the state is viewed as just one participant in a complex interplay of social actors, including merchants, guilds, boat-builders, sailors, pilgrims, religious clergy and craft-producers. It will be welcomed by scholars and students of archaeology and ancient history, particularly those interested in South Asian studies.

HIMANSHU PRABHA RAY is Associate Professor at the Centre for Historical Studies, Jawaharlal Nehru University.
CAMBRIDGE WORLD ARCHAEOLOGY

Series editor
NORMAN YOFFEE, University of Michigan

Editorial board
SUSAN ALCOCK, University of Michigan
TOM DILLEHAY, University of Kentucky
STEPHEN SHENNAN, University College, London
CARLA SINOPOLI, University of Michigan

The Cambridge World Archaeology series is addressed to students and professional archaeologists, and to academics in related disciplines. Most volumes present a survey of the archaeology of a region of the world, providing an up-to-date account of research and integrating recent findings with new concerns of interpretation. While the focus is on a specific region, broader cultural trends are discussed and the implications of regional findings for cross-cultural interpretations considered. The authors also bring anthropological and historical expertise to bear on archaeological problems and show how both new data and changing intellectual trends in archaeology shape inferences about the past. More recently, the series has expanded to include thematic volumes.

Books in the series
A.F. HARDING, European Societies in the Bronze Age
RAYMOND ALLCHIN AND BRIDGET ALLCHIN, The Rise of Civilization in India and Pakistan
CLIVE GAMBLE, The Palaeolithic Settlement of Europe
CHARLES HIGHAM, Archaeology of Mainland South East Asia
SARAH MILLEDGE NELSON, The Archaeology of Korea
DAVID PHILLIPSON, African Archaeology (second revised edition)
OLIVER DICKINSON, The Aegean Bronze Age
KAREN OLSEN BRUHNS, Ancient South America
ALASDAIR WHITTLE, Europe in the Neolithic
CHARLES HIGHAM, The Bronze Age of Southeast Asia
CLIVE GAMBLE, The Palaeolithic Societies of Europe
DAN POTTS, The Archaeology of Elam
NICHOLAS DAVID AND CAROL KRAMER, Ethnoarchaeology in Action
CATHERINE PERLÈS, The Early Neolithic in Greece
JAMES WHITLEY, The Archaeology of Ancient Greece
PETER MITCHELL, The Archaeology of Southern Africa
HIMANSHU PRABHA RAY, The Archaeology of Seafaring in Ancient South Asia
TIMOTHY INSOLL, The Archaeology of Islam in Sub-Saharan Africa
PETER M.M.G. AKKERMANS AND GLENN M. SCHWARTZ, The Archaeology of Syria
## CONTENTS

**List of figures**  \hspace{2cm} page x

**Acknowledgements**  \hspace{2cm} xii

1 Historiography and the maritime landscape  \hspace{2cm} 1
   1.1 The perspective  \hspace{2cm} 1
   1.2 Historiography  \hspace{2cm} 10
   1.3 The maritime landscape  \hspace{2cm} 19
   1.4 Geographical knowledge of the Indian Ocean in antiquity  \hspace{2cm} 25

Archaeology of trade  \hspace{2cm} 27
The palaeoenvironment and location of Mahasthangarh  \hspace{2cm} 28

2 Fishing and sailing communities: cross-cultural contacts  \hspace{2cm} 30
   2.1 Marine and coastal resources  \hspace{2cm} 30
   2.2 Maritime communities: beginnings  \hspace{2cm} 37
   2.3 Boat nomads  \hspace{2cm} 43
   2.4 Piracy  \hspace{2cm} 46
   2.5 Fishing communities: the historical record  \hspace{2cm} 47
   2.6 Sailing communities  \hspace{2cm} 51

Tamil poems of love and war  \hspace{2cm} 53
Pearl fisheries of the Gulf of Mannar  \hspace{2cm} 53

3 *La longue durée*: transportation, boat-building technology and navigation  \hspace{2cm} 55
   3.1 Archaeology of the boat  \hspace{2cm} 55
   3.2 The stitched tradition  \hspace{2cm} 59
   3.3 Early European response  \hspace{2cm} 64
   3.4 The ethnographic evidence  \hspace{2cm} 66
   3.5 Boat-building centres  \hspace{2cm} 70
   3.6 Traditional navigation  \hspace{2cm} 70
   3.7 Ownership of vessels  \hspace{2cm} 72
   3.8 Organisation of shipping  \hspace{2cm} 74
   3.9 Innovation and change  \hspace{2cm} 75
Contents

3.10 Repair and maintenance 77
3.11 Chronology of disjunction 77
Maritime archaeology of the Indian Ocean 80

4 Maritime trade networks: the beginnings (third to second millennia BCE) 82
4.1 Mesopotamian contacts 84
4.2 The Persian Gulf and early maritime networks 87
4.3 The Harappan civilisation 91
4.4 The maritime regions of the Harappans 93
4.5 Internal networks of trade 96
4.6 Transition and change 98
Instruments of trade 100

5 Regional integration (late second to early first millennia BCE) 103
5.1 The Persian Gulf 105
5.2 Socotra 109
5.3 Peninsular India 111
5.4 Sri Lanka 117
5.5 Southeast Asia 120
The megalith builders of peninsular India 125
Arikamedu: changing paradigms 127

6 Consolidation of the political structure 129
6.1 The setting 129
6.2 Political concepts in early Buddhism: theory and practice 133
6.3 Satavahanas and their successors 136
6.4 Alliance as political strategy 145
6.5 The early polities in Sri Lanka 147
6.6 Political developments in early Southeast Asia 149
6.7 Royalty and ritual 152
Archaeology of early polities 152
Royal inscriptions from peninsular India 155

7 The Greeks: adventurers, travellers and traders 165
7.1 The explorers 168
7.2 Hellenistic settlements 172
7.3 The Nabataeans, Sabaeans and Gerrhaeans 175
7.4 The maritime network 177
7.5 Christian communities 182
Indo-Greek coins 186
## Contents

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>The merchant lineage and the guild</td>
<td></td>
</tr>
<tr>
<td>8.1</td>
<td>Merchant communities: interaction with the state</td>
<td>188</td>
</tr>
<tr>
<td>8.2</td>
<td>Organisation of inland trade</td>
<td>193</td>
</tr>
<tr>
<td>8.3</td>
<td>The Indian Ocean network</td>
<td>198</td>
</tr>
<tr>
<td>8.4</td>
<td>Foreigners and trade networks</td>
<td>205</td>
</tr>
<tr>
<td>8.5</td>
<td>Money and the use of coins</td>
<td>208</td>
</tr>
<tr>
<td></td>
<td>The prevalence of writing</td>
<td>212</td>
</tr>
<tr>
<td>9</td>
<td>Craft production and trading networks: multiple meanings</td>
<td></td>
</tr>
<tr>
<td>9.1</td>
<td>The trading commodities</td>
<td>214</td>
</tr>
<tr>
<td>9.2</td>
<td>Textiles</td>
<td>216</td>
</tr>
<tr>
<td>9.3</td>
<td>Beads</td>
<td>217</td>
</tr>
<tr>
<td>9.4</td>
<td>Ivory</td>
<td>227</td>
</tr>
<tr>
<td>9.5</td>
<td>Metal artefacts</td>
<td>231</td>
</tr>
<tr>
<td>9.6</td>
<td>Organisation of crafts</td>
<td>233</td>
</tr>
<tr>
<td></td>
<td>Terracottas from the Deccan</td>
<td>235</td>
</tr>
<tr>
<td></td>
<td>Begram ivories: analogies with early Buddhist sites</td>
<td>237</td>
</tr>
<tr>
<td>10</td>
<td>Shared faith</td>
<td></td>
</tr>
<tr>
<td>10.1</td>
<td>Social base of early Buddhism</td>
<td>245</td>
</tr>
<tr>
<td>10.2</td>
<td>The worship of the stupa and the relics</td>
<td>248</td>
</tr>
<tr>
<td>10.3</td>
<td>Pilgrimage</td>
<td>251</td>
</tr>
<tr>
<td>10.4</td>
<td>Ritual and ceremony</td>
<td>253</td>
</tr>
<tr>
<td>10.5</td>
<td>Buddhism and maritime activity</td>
<td>255</td>
</tr>
<tr>
<td>10.6</td>
<td>Archaeology of monastic sites</td>
<td>258</td>
</tr>
<tr>
<td>10.7</td>
<td>Continuity and change</td>
<td>260</td>
</tr>
<tr>
<td></td>
<td>Details of relic caskets enshrined</td>
<td>269</td>
</tr>
<tr>
<td>11</td>
<td>Retrospect and prospect</td>
<td></td>
</tr>
<tr>
<td>11.1</td>
<td>In conclusion</td>
<td>272</td>
</tr>
<tr>
<td>11.2</td>
<td>Future research strategy</td>
<td>275</td>
</tr>
<tr>
<td></td>
<td>Land grants to brahmanas: beginnings of agriculture in peninsular India</td>
<td>275</td>
</tr>
<tr>
<td>Glossary</td>
<td></td>
<td>279</td>
</tr>
<tr>
<td>References</td>
<td></td>
<td>280</td>
</tr>
<tr>
<td>Index</td>
<td></td>
<td>281</td>
</tr>
</tbody>
</table>

© Cambridge University Press  www.cambridge.org
FIGURES

1.1 The Indian Ocean  ........................................... page 4
1.2 Monsoon winds and currents in the Indian Ocean  21
1.3 Palaeoenvironment of Mahasthangarh  23

2.1 Marine shell resources and distribution networks  32
2.2 Location of Khok Phanom Di  42
2.3 Chaw Lay sites on Phuket island  45

3.1 Boats carrying pots in Ajanta paintings  65
3.2 Shell-built vessel on the Orissa coast  68
3.3 Skeleton construction on the Andhra coast  69
3.4 Masulas transporting cargo to the shore  79
3.5 Clay sealing from Chandraketugarh  80

4.1 Major areas in the third millennium BCE  86
4.2 Metal resources and distribution networks  89
4.3 Principal sites of the Harappan civilisation  92

5.1 Principal Iron Age sites in Oman  107
5.2 Archaeological sites on the island of Socotra  110
5.3 Archaeological sites in the Coimbatore district  112
5.4 Trade centres in Tamil Nadu  114
5.5 Archaeological sites in Sri Lanka  118
5.6 Metal Age sites in Indonesia  123

6.1 Sites with Asokan inscriptions  134
6.2 Sites of inscriptions in the Deccan  137
6.3 Façade of the cave at Nasik  138

7.1 The Erythraean Sea  171
7.2 Hellenistic settlements in the Persian Gulf  173
7.3 Location of Begram and other sites  178
7.4 Location of sites identified as Christian centres  184

8.1 Sites along the Red Sea  190
8.2 Buddha images at Kanheri  197
List of figures

8.3 The Indian Ocean network from the third to sixth centuries CE 199
8.4 Inscription of Buddhagupta 204
8.5 General view of Arikamedu 207
8.6 Find-spots of Roman coins in India 211
9.1 Indian cloth from Southeast Asia 215
9.2 Painting from Ajanta 222
9.3 Painting of a ceiling from Ajanta 226
9.4 Beads in the trade network, from the site of Ban Don Ta Phet, Thailand 229
9.5 One of the Begram ivories 232
9.6 Terracotta from Ter 236
10.1 Stupa worship at Sanchi 256
10.2 Avalokitesvara from cave 90 at Kanheri 259
10.3 Buddhist sites in peninsular India 261
10.4 Asokan edict at Brahmagiri 262
10.5 Buddhist rock-cut caves at Kanheri 264
10.6 Stone bowl at Thotlakonda 265
ACKNOWLEDGEMENTS

My involvement with research on boats began in September 1992 at the invitation of the Director of the National Institute of Science, Technology and Development Studies (NISTADS), Dr Ashok Jain. Over the years, I have benefited from hospitality provided by a number of scholars and institutions. The Centre Nationale de Recherche Scientifique (CNRS) awarded me a three-month Visiting Fellowship at the Maison de l'Orient Méditerranéen, Lyon, during May–August 1996 and the University of Lyon II invited me again in 2001 as Visiting Professor. I am grateful to Dr J.-F. Salles and Professor Marie-Françoise Boussac for the hospitality and for academically rewarding stays in Lyon.

A two-year fellowship from the Society for Indian Ocean Studies in March 1996 sustained my field-work in India, and it is with gratitude that I acknowledge the support from Professor Satish Chandra and his staff at the Society. At different centres within the country I have received support for field-work from Professor G. V. Rajamanickam and his team at the Tamil University; Professor V. N. Misra at the Deccan College; Professor V. H. Sonawane and Dr K. Krishnan at the Maharaja Sayajirao University, Vadodara; and Professor E. V. Gangadharan and Professor C. Somasundara Rao at Visakhapatnam.

A field visit to the Orissa coast early in 1996 was partially supported by a grant from the DSA Programme of the Centre for Historical Studies, Jawaharlal Nehru University. The discussions with other members of the team – Professor S. McGrail, Dr E. Kentley and Ms L. Blue – were useful, but I alone am responsible for the interpretation of the data used in this study.

As a Senior Visiting Fellow at the International Institute of Asian Studies, Leiden, from June to August 1997, I was able to utilise the extensive library collection of the Kern Institute. During my stay at Leiden I received valuable leads and suggestions from Professor J. G. De Casparis, Professor J. C. Heesterman, Professor G. Obeyesekere and Professor Karel van Kooij.

The most rewarding part of research was the joint co-ordination of two international conferences on the Indian Ocean. One was hosted by NISTADS in February–March 1994 in New Delhi, while the Maison de l'Orient Méditerranéen in Lyon supported the second in July 1996. This was followed by participation in three of the workshops in the series on ‘The Indian Ocean: Trans-regional Creation of Societies and Cultures’ organised by Professor David Parkin and Dr Ruth Barnes at the University of Oxford between 1998 and
Acknowledgements

2001. The scholarly discussions and interactions at these conferences have contributed greatly to the intellectual content of this work. It is with gratitude that I acknowledge my debt to the participants.

But perhaps the greatest debt that I owe is to Carla Sinopoli, who invited me to the Department of Anthropology, University of Michigan, Ann Arbor, on a Fulbright Visiting Lecturer grant in 2000. Together with Norman Yoffee, she then encouraged me to undertake the writing of this work. Cambridge University Press responded positively to my proposal and accepted its inclusion in the Cambridge World Archaeology series. Severine Sanz in Lyon and Uma Bhattacharya in New Delhi drew the maps and I am grateful to both for their help.

Over the years I have taught a course on Seafaring and Maritime Contacts of Ancient India to the postgraduate students at the Centre for Historical Studies, Jawaharlal Nehru University. The enthusiasm of the students has been rewarding and a constant source of motivation.

Finally, this study has only been possible through the consistent and ungrudging support provided by Chandan.

March 2002

H.P.R.