

**INDO-BYZANTINE EXCHANGE, 4<sup>TH</sup> TO 7<sup>TH</sup> CENTURIES: A GLOBAL  
HISTORY**

By

REBECCA R. DARLEY

A thesis submitted to the  
University of Birmingham  
for the degree of  
DOCTOR OF PHILOSOPHY

Centre for Byzantine, Ottoman and Modern Greek Studies  
Classics, Ancient History and Archaeology  
College of Arts and Law  
University of Birmingham  
September 2013

UNIVERSITY OF  
BIRMINGHAM

**University of Birmingham Research Archive**

**e-theses repository**

This unpublished thesis/dissertation is copyright of the author and/or third parties. The intellectual property rights of the author or third parties in respect of this work are as defined by The Copyright Designs and Patents Act 1988 or as modified by any successor legislation.

Any use made of information contained in this thesis/dissertation must be in accordance with that legislation and must be properly acknowledged. Further distribution or reproduction in any format is prohibited without the permission of the copyright holder.

## ABSTRACT

This thesis uses Byzantine coins in south India to re-examine pre-Islamic maritime trade between the Mediterranean and south India. Analysis of historiographical trends, key textual sources (the *Periplus of the Erythreian Sea* and the *Christian Topography*, Book Eleven), and archaeological evidence from the Red Sea, Aksum, the Persian Gulf and India, alongside the numismatic evidence yields two main methodological and three historical conclusions. Methodologically, the multi-disciplinary tradition of Indo-Roman studies needs to incorporate greater sensitivity to the complexities of different evidence types and engage with wider scholarship on the economic and state structures of the Mediterranean and India. Furthermore, pre-Islamic Indo-Mediterranean trade offers an ideal locus for experimenting with a practical global history, particularly using new technologies to enhance data sharing and access to scholarship. Historically, this thesis concludes: first, that the significance of pre-Islamic trade between the Mediterranean and India was minimal for any of the participating states; second, that this trade should be understood in the context of wider Indian Ocean networks, connecting India, Sri Lanka and southeast Asia; third, that the Persian Gulf rather than the Red Sea probably formed the major meeting point of trade from east and west, but this is not yet demonstrable archaeologically, numismatically or textually.



For Patrick John Royston and Mark Blackburn

## ACKNOWLEDGEMENTS

The completion of this thesis has relied upon the assistance, inspiration and forbearance of many and it is inevitable that this list will be incomplete. Nevertheless, it is my pleasure to acknowledge the contribution of various individuals and institutions, without whom there would be no history of 4<sup>th</sup>-7<sup>th</sup> century Indo-Byzantine exchange. Like the study itself, these acknowledgements are most logically viewed from a regional perspective.

*India:* studying the coins in Indian private and museum collections, studying Tamil and using library resources difficult to access outside the subcontinent was the enjoyable occupation of three periods of research in April 2009, April-May 2010 and January-February 2011. I would like to acknowledge the invaluable assistance and generosity of the Madras Government Museum (Chennai) and its director, Dr T. S. Sridhar, and keeper of coins, S. Sundararajan. Also in Chennai Dr R. Krishnamurthy was extremely generous in allowing my access to his personal collection, providing accommodation for one visit to Chennai, giving me access to books and introducing me to friends and colleagues involved in coin and antiquities collecting in Tamil Nadu. His assistants, K. Ramchandaran and Mr Venkatesan coordinated my travel to meet with coin collectors and dealers. K. Murugan kindly allowed me to view items in his private collections and facilitated meetings with antiquities hunters during my visit to Karur on Dr Krishnamurthy's advice. Also in Tamil Nadu, Dr S. Suresh was kind enough to meet with me and discuss the context for archaeological tourism in modern south India, as well as providing me with valuable bibliographic material. S. Sreekumar of Chennai provided me with accommodation and practical support throughout my visits. Dr. S. Shakuntala of Sri Venkateshwara University, Tirupati, accommodated my last-minute request to attend the 2011 conference of the South Indian Numismatic Society and welcomed me to her home for the duration of my stay.

In Andhra Pradesh my research was made possible by the generous hospitality of Satyodayam and later St Patrick's School (Hyderabad), both institutions of the Society of Jesus (Jesuits) in south India. For accommodation, assistance travelling in the city, engaging discussions about my work and assistance learning Tamil I extend my thanks to the Society and to brothers Edwin (who was also my first Tamil teacher, and to whose patience I owe much) and Arun. In the A.P. Department of Archaeology and Museums I would like to acknowledge the support for and interest in my work offered by the state commissioner for archaeology, Dr P. Chenna Reddy, and the keeper of coins, Dr. V. Suguna Sarma. Prof. A. K. Jha during his brief research visit to Hyderabad also offered me useful advice and lines of inquiry. Dr Rajesh of the University of Hyderabad provided invaluable discussion and bibliographic material concerning the role of Jain communities in early historic southeast India.

In Karnataka, Dr Swamy of the Directorate of Archaeology and Museums generously provided assistance when I arrived to view the state coin collection and the commissioner for museums and archaeology, Dr R. Gopal was most welcoming. In Kerala I twice had the opportunity to visit the excavations at Pattanam, just outside Kochi, and extend my thanks to all of the staff at the site who were most helpful and welcoming, but especially to Dr P. J. Cherian and Dr S. Shajan for arranging my visit and making documentation of the excavation available to me. K. Anand very generously allowed me to view and photograph his extensive collection of beads and micro-beads recovered from the site. In Mumbai Dr P. V. Radhakrishnan of the Museum of the Reserve Bank of India assisted me with bibliographic material, insightful discussion, access to unpublished studies on which he was working and a tour of the Reserve Bank museum. I am most grateful for all of the time and effort made on my behalf during my research visits to India.

*Sri Lanka:* though material from Sri Lanka does not play a substantial role in my study, my visit there in 2011 nevertheless incurred debts of gratitude for hospitality and assistance in seeking to fulfil my research aims on the island. Particular thanks go to the American Institute of Sri Lankan Studies (Colombo) and its local representatives, Mrs Ira Unamboowe and Mr Weerasooriya. Despite recent and looming budget cuts and the political and military difficulties which have afflicted Sri Lanka in recent years, the AISLS made me welcome during my visit and extended every possible assistance. At the National Museum and the Department of Archaeology I would like to thank Dr Senarath Wickramasinghe and Dr O. Bopearachchi (respectively) for the opportunity to examine imitation Roman coins found on the island. I. Palitha Subasinghe and his wife not only assisted me in accessing the coins (sitting with me daily) but also insisted on providing me with lunch every day during my visit, for which I offer my heartfelt thanks.

*Europe:* in Vienna the Institut für Numismatik und Geldgeschichte extended an invitation to me to speak at their seminar series, which also afforded an invaluable opportunity to examine their collection of Prof. P. Berghaus's research materials, resulting in the identification of the photographs of the Akki Alur hoard, which feature in the catalogue of this thesis. Dr Reinhold Wolters of the Institut offered every possible assistance and I cannot thank him enough for his challenging and valuable questions about my project. Prof. Wolfgang Hahn hosted me during my stay and gave me access to his own substantial collection of Aksumite and late Roman coins, including the Mangalore hoard, discussed in chapter five, and a variety of pierced or framed coins, the images of which appear in chapter five. In Germany Prof. Hans-Joachim Weisshaar of the Tissamaharama Project and the University of Bonn provided me with valuable bibliographic material and discussion of the archaeology of the 'Indo-Roman' period in Sri Lanka. Dr. Reinhold Walburg of the Deutsche Bundesbank Geldmuseum provided

immeasurable help in framing my conclusions about the role of imitation Roman coinage in Sri Lanka.

*U.S.A.:* much of the initial work planning my field research and honing the skills I would use on museum visits was undertaken at the Dumbarton Oaks Research Library and Collection (Washington, D.C.) on their biennial Numismatics and Sigillography Summer School (2009), organized by Prof. Cecile Morrisson. I am grateful to Prof. Morrisson for her guidance and support at the early stages of my dissertation and for the bibliographic material which she has most kindly sent my way thereafter. My thanks also go out to the affiliates of Dumbarton Oaks who provided teaching during that course in the use of mapping and database software, coin cataloguing, coin identification and handling and museum policy.

After such a promising start to my research in the unparalleled library at Dumbarton Oaks it was a privilege to be able to undertake much of the completion of my thesis in the same environment, as the recipient of a Junior Research Fellowship (2012-13). My nine months there refined many of my conclusions and provided the financial support needed to undertake a fourth year of research and writing. My thanks are due to the whole community of academic, administrative and security staff, who fostered a supportive and scholarly environment unlike any other. In particular my thanks go to Prof. Margaret Mullett (Director of Byzantine Studies), Prof. Jan Ziolkowski (Director), Prof. Colin McEwan (Director of Pre-Columbian Studies) and Dr Scott Johnson. For everything in a formative year: Sarah Bogart, Jonathan Shea, Beatrice Daskas, Fani Gargova, Lisa Trever, Axel Nielsen, Dylan Clark, Kuba Kabala and Maeve Skidmore.

*U.K.:* Last but my no means least, most of this thesis has been researched and written in the U.K. and particularly at the University of Birmingham in the Centre for Byzantine, Ottoman and Modern Greek Studies, with invaluable financial support from the Arts and Humanities Research Council (U.K.). The University of Birmingham also provided financial assistance for research training and field work in the form of grants from the Postgraduate Research Development Fund, the Student Conference and Travel Fund, the Roberts Fund and the CAL Research Travel Grant. Research time has, however, also been spent in Cambridge where thanks are due to Dr Peter Sarris, with whom this project began, Dr Sujit Sivasundaram for involving me in the most significant global research meeting on Sri Lankan history in over thirty years, and Cambridge University Library. Staff in the Department of Coins and Medals at the Fitzwilliam Museum, especially Dr Martin Allen, Prof. Ted Buttrey, Dr Jonathan Jarrett and Dr Adi Popescu, inspired and supported my research at times, but none more so than Mark Blackburn, to whom this thesis is dedicated.

At the British Museum Dr Joe Cribb and Dr Robert Bracey have both offered extremely useful suggestions and have shaped my arguments with advice for wider reading and insightful questions. The Royal Numismatic Society invited me to present my research at an early stage, eliciting invaluable feedback from a number of members of the society, to all of whom I am grateful. At the Ashmolean Museum, Dr Julian Baker and Dr Shailendra Bhandare offered excellent suggestions and advice concerning my approaches and (in the latter case) conducting research around private coin collections in India.

The Society for the Promotion of Byzantine Studies 2006 Fund provided generous assistance to allow me to present research at the 22<sup>nd</sup> International Congress of Byzantine Studies in Sofia in 2011.

At the University of Birmingham I have enjoyed an environment of intellectual freedom and support without which this thesis would not have been possible and for which I thank all members of staff and fellow research students in the IAA, CBOMGS and CAHA, but particularly Georgia Michael and Emma Login and Dr Ken Wardle, Dr Ruth Macrides and Dr Henry Chapman. During my time in Birmingham Prof. Chris Wickham has also offered advice and constructive discussion, which has shaped the arguments made in my thesis significantly. During their stay in Birmingham, I was also privileged to meet Gunaseeli Vincent and her husband, Vincent Packianathan. Vincent's work on the impact of Dalit theology on grassroots movements in India generated valuable debates about the role of scholarship in society, and impacted upon the shape of this thesis. Without Guna, however, some sections of it would not have been possible. She took over my Tamil teaching at an early stage and made learning a challenging and sometimes bewildering language immensely rewarding and enjoyable.

In its final stage this thesis benefitted considerably from the input and critique of my examiners, Dr Naomi Standen (University of Birmingham) and Dr Roberta Tomber (British Museum). I am grateful to both of them for their insights and rigorous improvement of my initial work. Final corrections to the text were undertaken during the beginning of my tenure as a Research Associate on the 'Bilderfahrzeuge' Project at the Warburg Institute, London and I am grateful to the group, and especially Institute Director, Prof. Peter Mack, and group coordinator Johannes von Müller for their support and the space to complete this project in an atmosphere of warmth and exciting scholarly exchange.

Ultimately, however, my experience of writing this thesis has been determined by my supervisors, Dr Archie Dunn and Prof. Leslie Brubaker and my colleague and friend, Daniel Reynolds. I could not have imagined better company or guidance for the last four years of my life or for this project.

Last, but also first, my thanks to Maria Baqueriza, Ian Davies, Haibo E, Simmi Gill and Meredydd Luff and to my brother Will and my parents, Bill and Maria Darley.

The merits of my thesis (and its existence) are therefore testament to the support of many. Its faults remain, of course, my own.

**TABLE OF CONTENTS**

<b>CHAPTER ONE: INTRODUCTION</b>	25
<b>1.1 Introduction</b>	25
<b>1.2 Geographical and political terms</b>	34
<b>1.3 Chronological terms – Indo-Roman to Indo-Byzantine</b>	47
<b>1.4 Sri Lanka</b>	54
<b>1.5 Global history through global research</b>	57
<b>1.6 Conclusion</b>	62
<b>CHAPTER TWO: INDO-ROMAN SCHOLARSHIP AND THE BACKGROUND TO INDO-BYZANTINE STUDIES</b>	63
<b>2.1 Introduction</b>	63
<b>2.2 Historical background</b>	68
<b>2.3 Separating Indo-Roman and Indo-Byzantine</b>	73
<b>2.4 Methodological discussion</b>	76

<b>2.5 Interpretative discussion</b>	90
<b>2.6 Beyond the British academy</b>	98
<b>2.7 Conclusion</b>	104
<b>CHAPTER THREE: THE <i>PERIPLUS OF THE ERYTHREIAN SEA</i> AND <i>THE CHRISTIAN TOPOGRAPHY</i>, BOOK ELEVEN</b>	108
<b>3.1 Introduction</b>	108
<b>3.2 The <i>Christian Topography</i> (Book Eleven)</b>	109
<b>3.3 The <i>Periplous of the Erythreian Sea</i></b>	125
<b>3.4 The ninth century and Byzantine geographical writing</b>	156
<b>3.5 Conclusion</b>	157
<b>CHAPTER FOUR: THE AKSUMITE EMPIRE</b>	160
<b>4.1 Introduction</b>	160
<b>4.2 Background to the Aksumite Empire</b>	162



<b>4.3 Reinterpreting Aksum</b>	168
<i>4.3a Revisiting the numismatic evidence</i>	189
<b>4.4 Conclusion</b>	207
<b>CHAPTER FIVE: BYZANTINE COINS IN INDIA</b>	209
<b>5.1 Introduction</b>	209
<b>5.2 Methodological considerations</b>	210
<i>5.2a Coins as objects or series and the possibilities of quantification</i>	210
<i>5.2b The impact of collecting strategies on numismatic evidence for Indo-Byzantine trade</i>	212
<i>5.2b (i) Metal</i>	213
<i>5.2b (ii) The history of modern India and antiquities legislation</i>	215
<b>5.3 The Archaeological Survey of India (ASI)</b>	222
<i>5.3a Museum Collections in south India</i>	227
<i>5.3a (i) Department of Archaeology, Museums and Heritage, Mysore</i>	228

*(Karnataka)*

<i>5.3a (ii) Andhra Pradesh State Museum</i>	230
<i>5.3a (iii) Madras Government Museum (Tamil Nadu)</i>	232
<i>5.3a (iv) Kerala State Department of Archaeology</i>	237
<b><i>5.3b The role and importance of private collectors</i></b>	238
<b><i>5.3c Using published data</i></b>	243
<b>5.4 Coins as economic history</b>	244
<i>5.4a Chronological patterns and the termination of coin finds</i>	244
<i>5.4b Stockpiling and selecting coins for use</i>	245
<i>5.4c Copper coins in India</i>	251
<i>5.4d Copper coins and Lanka</i>	252
<b>5.5 Coins as social history</b>	258
<i>5.5a Piercings, jewellery and bracteates</i>	258

<i>5.5b Imitations</i>	267
<i>5.5c Chronological change and continuity in use</i>	273
<i>5.5d Scratch marks and slash marks</i>	276
<i>5.5e Distribution</i>	285
<i>5.5f Puja dust</i>	288
<b>5.6 Conclusion</b>	289
<b>CHAPTER SIX: THE RED SEA AND THE PERSIAN GULF</b>	293
<b>6.1 Introduction</b>	293
<b>6.2 Textual sources on the Red Sea and the Persian Gulf</b>	294
<b>6.3 Archaeology and new developments</b>	309
<i>6.3a Archaeology and the Persian Gulf</i>	309
<i>6.3b Case Study – Sasanian coins (evidence and absence)</i>	313

<i>6.3c Archaeology and the Red Sea</i>	318
<b>6.4 The Roman context</b>	326
<b>6.5 Conclusion</b>	334
<b>CHAPTER SEVEN: INDIA IN INDO-BYZANTINE EXCHANGE</b>	338
<b>7.1 Introduction</b>	338
<b>7.2 South India in the fourth to seventh centuries</b>	339
<b>7.3 The <i>Cankam</i> literature: of <i>Yavanas</i> and chronology</b>	352
<b>7.4 Indo-Roman trading ports</b>	359
<i>7.4a Arikamedu</i>	362
<i>7.4b Pattinam</i>	365
<i>7.4c Other sites</i>	368
<b>7.5 Conclusion</b>	374
<b>CHAPTER EIGHT: CONCLUSION AND NEW AVENUES</b>	377

<b>8.1 Introduction</b>	377
<b>8.2 Historical conclusions</b>	377
<b>8.3 Theoretical and methodological conclusions</b>	387
<b>8.4 New avenues</b>	391
<b>8.5 Indian Ocean studies and interdisciplinary research</b>	396
<b>8.7 Conclusion</b>	398
 <b>APPENDICES</b>	
<b>Appendix 1: Catalogue of coins</b>	2
<i>A1.1 Format</i>	2
<i>A1.2 Conventions and abbreviations</i>	2
<i>A1.3 Catalogue of coins</i>	3
<b>Appendix 2: Glossary</b>	33

<b>Appendix 3: <i>The Christian Topography</i></b>	39
<b>Appendix 4: Letters of permission</b>	55
<b>Appendix 5: Coins of Karur (Day, in press)</b>	58
<b>Appendix 6: coin data for Fig. 5.8</b>	68
<b>BIBLIOGRAPHY</b>	73

**LIST OF FIGURES**

<b>1.1</b>	<i>Map showing regions of focus and a selection of major sites discussed</i>	26
<b>1.2</b>	<i>Map of the Roman Empire c. A.D. 116</i>	37
<b>1.3</b>	<i>Map of the Roman Empire c. A.D. 300</i>	40
<b>1.4</b>	<i>Map of the Roman Empire at its greatest extent under Justinian I (c. 565)</i>	43
<b>1.5</b>	<i>Map of the Roman Empire and the Abbasid Caliphate c. 800</i>	44
<b>1.6</b>	<i>Map of the extent of the campaigns of Alexander the Great c. 325 B.C</i>	49
<b>1.7</b>	<i>A first- to second-century Gandharan sculpture of the Buddha</i>	51
<b>1.8</b>	<i>A silver drachm of the most famous Indo-Greek monarch, Menander (r. 165/155-130 B.C.)</i>	52
<b>2.1</b>	<i>Map showing the imperial territories held in India by the French in the late eighteenth century and the eventual domination of the subcontinent by the British by the late nineteenth century</i>	91
<b>3.1</b>	<i>Map showing the origin of the rhinoceros, musk deer, hippopotamus, yak and giraffe, along with black pepper</i>	118

<b>3.2</b>	<i>Image of the world according to the author of the Christian Topography</i>	121
<b>3.3</b>	<i>Gap left by scribe in the Heidelberg copy of the Periplus of the Erythreian Sea (f. 40 v.)</i>	128
<b>3.4</b>	<i>Header f. 40v. Codex Palatinus Graecus 398 (Heidelberg), showing the title and attribution of the text</i>	136
<b>4.1</b>	<i>Map of the Aksumite state with major sites marked</i>	161
<b>4.2</b>	<i>Map showing the contested borders in the Eritrean war of independence (image by Joe Burgess)</i>	164
<b>4.3</b>	<i>The stelea of pre-Christian Aksum represent an independent tradition of monumental architecture</i>	166
<b>4.4</b>	<i>A fifteenth-century century Ge'ez manuscript, open on the Gospel of Matthew</i>	188
<b>4.5</b>	<i>Aksumite copper, silver and gold coins of Ezana (all post-conversion to Christianity)</i>	190
<b>4.6</b>	<i>A copper coin of Ousanas (c. 350-400) with gilding visible on the reverse</i>	193
<b>4.7</b>	<i>Gold coin of the late Kushan king Shaka I (c. 325-45), struck at the 7.9 g. weight standard modelled on the Roman 8 g. aureus</i>	196
<b>4.8</b>	<i>Pre-Christian gold coin and copper coins (obverse) of Endubis c. A.D.</i>	202



*227-35 showing the king in a cloth headdress, surrounded by barley stalks and with a crescent and circle design over the royal bust*

<b>5.1</b>	<i>Map of India c. 1800 with British territory marked</i>	217
<b>5.2</b>	<i>Map of south India c. 1937 showing the consolidation of British authority over the majority of the peninsula</i>	218
<b>5.3</b>	<i>Map of modern peninsular India showing federal states of which the four southernmost states are relevant for this study</i>	220
<b>5.4</b>	<i>Map of the jurisdictional 'circles' of the ASI from 2006, highlighting the regions covered and the main administrative centre of each circle</i>	224
<b>5.5</b>	<i>Distribution of late Roman gold coins by state in India</i>	234
<b>5.6</b>	<i>Distribution map of Roman (green) and late Roman (red) coins in India with major cities marked</i>	235
<b>5.7</b>	<i>Proportion of Roman and late Roman precious metal coins discovered in India</i>	248
<b>5.8</b>	<i>Roman and late Roman coins from south India arranged chronologically by metal</i>	249
<b>5.9</b>	<i>Unpublished copper coin from the R. Krishnamurthy collection showing a possible piercing</i>	259
<b>5.10</b>	<i>Image Number 38 from Hahn (Nawartmal) publication of the Mngalore</i>	260

*hoard, showing double piercings keeping the royal busts upright*

- |             |   |     |
|-------------|---|-----|
| <b>5.11</b> | <i>Temple statue from the Meenakshi Temple (Madurai) showing a male deity wearing anklets and belt decorated with round hanging objects</i> | 261 |
| <b>5.12</b> | <i>Semissis of Zeno looped for suspension from Syria</i>  | 262 |
| <b>5.13</b> | <i>Imitation solidus of Zeno with Indian double piercings</i>   | 263 |
| <b>5.14</b> | <i>Uniface bracteate inspired by Late Antique coins design</i>  | 265 |
| <b>5.15</b> | <i>Second uniface bracteates inspired by Late Antique design but of poor quality gold and craftsmanship</i>                                 | 265 |
| <b>5.16</b> | <i>Genuine coins, imitations and copies in catalogue (Appendix 1)</i>   | 269 |
| <b>5.17</b> | <i>High-quality probable imitation of a late Roman solidus</i>  | 270 |
| <b>5.18</b> | <i>Crude imitation of a late Roman solidus</i>  | 270 |
| <b>5.19</b> | <i>Table of distinction between different levels of coin imitation</i>  | 271 |
| <b>5.20</b> | <i>Imitation solidus with a blundered obverse and reverse legend</i>  | 272 |
| <b>5.21</b> | <i>Imitation solidus showing radial die wear patterns and die crack</i>   | 273 |

<b>5.22</b>	<i>Coins from Appendix 1, arranged chronologically, with and without piercings</i>	275
<b>5.23</b>	<i>Coins from Appendix 1, arranged chronologically, with and without scratch marks</i>	276
<b>5.24</b>	<i>Coin cut into three pieces, all discovered together, and with double piercings</i>	277
<b>5.25</b>	<i>Roman aureus exhibiting a distinctive slash mark to the imperial bust and double piercing</i>	278
<b>5.26</b>	<i>Copy inspired by late antique coin design, featuring deep slash marks, chiselled across the 'imperial' portrait</i>	279
<b>5.27</b>	<i>Highlighted examples of scratch marks on coins in the Akki Alur hoard</i>	282
<b>5.28</b>	<i>Enlargement of scratches on a solidus of Anastasius I</i>	284
<b>5.29</b>	<i>Distribution map of Roman and late Roman coins with the Palghat Pass marked.</i>	285
<b>5.30</b>	<i>Roman and late Roman coins in south India marked alongside major religious sites</i>	287
<b>5.31</b>	<i>Red residue highlighted on a late antique solidus</i>	289
<b>6.1</b>	<i>Map showing the Red Sea and Persian Gulf with key sites marked</i>	294

<b>6.2</b>	<i>Section of relief carving from Naqsh-i Rostam depicting the surrender of the emperor Valerian to Shapur I</i>	308
<b>6.3</b>	<i>Image of a Sasanian drachm of Yazdgerd II (r. A.D. 438-57) 29 mm, 3.68 g.</i>	315
<b>7.1</b>	<i>Map of south India with key sites marked</i>	340
<b>7.2</b>	<i>Map of south India c. first to fourth centuries A.D.</i>	347
<b>7.3</b>	<i>Prominent dynasties of south India after the fall of the Satavahanas (c. A.D. 300-600)</i>	350
<b>7.4</b>	<i>Major states after the fall of the Kalabhras (c. A.D. 650-)</i>	351
<b>7.5</b>	<i>Section of the Peutinger Map with Muziris and a temple of Augustus highlighted in lower right</i>	366
<b>7.6</b>	<i>Beads found around the Pattanam site</i>	371
<b>7.7</b>	<i>Southeast Asian sites with possible archaeological connections to south Indian ports of the fourth to seventh centuries.</i>	373

## NOTES ON SPELLING AND DIACRITICS

This thesis requires engagement with scholarship and sources in a variety of languages, often with variant traditions of translation and transliteration into other languages. In many cases the linguistic identity of the historical societies under consideration was in flux or remains a matter of debate. The Byzantine Empire was, between the fourth and seventh centuries, gradually moving towards a Greek-speaking civic and imperial identity, while Latin continued to play an important role as the traditional language of Roman governance and literary prestige. In south India the centuries under discussion represent one of the historical phases over which the sometimes fierce battle is fought concerning the ‘Sanskritisation’ of the Dravidian languages.

Modern conventions in scholarship throughout all of the regions discussed are a fluid mixture of partial (sometimes competing) systematization and widely accepted convention. Many of these conventions are themselves reflective of political or scholarly positions and trends and thus serve as useful markers in the shifting sands of disciplinary identity. As such, it is necessary to outline the conventions used throughout this thesis. In some cases they warrant explanation. In others they are just a choice made from a range of options, each of which has points to recommend it and arguments, which can be made against it. I have aimed for clarity and consistency throughout, and a glance over the bibliography of this thesis serves to demonstrate the futility of pursuing any more universal standard.

When translating and transliterating from texts produced in the Roman/Byzantine world, primacy is given to the language in which a text was written (or in which it survives) in determining the spelling of proper names. For the most part this means that names traditionally rendered into Latin but of Greek-speaking writers have been restored to a spelling most closely aligned to the Greek original, thus Prokopios, not Procopius. Moreover, for general place- and personal names since the geographical remit of this thesis is primarily the more Grecophone east of the empire, Greek is used as a default where no textual source is readily available. Thus Berenike, rather than Berenice, Klyisma rather than Clyisma.

The exceptions to this rule are the names of figures sufficiently well-known by a particular version of their name that it would be precious to insist on an alternative. Hence, Constantine I (rather than Konstantinos/Constantinus I) or Justinian I, rather than Iustinianus I. A further exception concerns the names of emperors more generally, and the language of coins. Here the coins themselves are taken as the point of reference for the thesis and although in the period under study Byzantium shifted strongly towards a Grecophone identity, the language used on the coins was Latin throughout. All emperors are therefore referred to by their Latin names (where there is no common, standard name such as Constantine): Anastasius not Anastasios, Heraclius not Herakleios. In referring to the coins, too, Latin is preferred, hence the standard gold denomination of the Roman/Byzantine Empire is referred to as a *solidus* (pl. *solidi*) rather than a *nomisma* (pl. *nomismata*) except when quoting directly from sources in Greek.

Transliterations from Tamil pose a larger problem since there is no widely agreed upon (let alone standard) system for rendering Tamil, or other south Indian languages, into the Latin alphabet, such that, for example, in the works cited by this thesis, a single author (T. Satyamurthy/T. Satyamurthi appears under two different spellings). Precisely accurate transliterations of south Indian languages using systems such as ISO 15919 are almost unreadable in English, of little benefit except for someone familiar with the original language, and almost never appear in the works of scholars working in these languages. Here, whenever a work is being cited, the spelling used by the author of their own name for that publication is used to avoid confusion. Where a scholar is being referenced with respect to their total research output the form of their name most commonly used in their own publications is preferred. In referring to historical figures and places the most widely used version is used e.g. Mahabalipuram (for the temple and port site in Tamil Nadu) rather than Mamallapuram.

In all transliterated languages, diacritics are avoided throughout, so Satavahana rather than Sātavāhana. This is both a response to the lack of a standard system for applying diacritics and a decision on behalf of easy electronic searchability of the text. Italics are used for technical terms used in other languages without translation, such as *Cankam* and *Yavana*. Every effort has been used to disambiguate and associate the terms used here with common alternative spellings (for example Sangam for *Cankam*) in the glossary. It is hoped that by including a copy of the text in the original language and script wherever possible, any nuances buried in translation/transliteration are not lost entirely, even if their impact on the argument being made is minimal.

Capitalisation is generally avoided except for proper names, but here periodization generates a grey area, which is discussed from an analytical perspective in chapter one, but which can be summarised orthographically here. Since periods often overlap with the names of political entities, such as the Roman, Byzantine or Sasanian empires, there is a degree of *de facto* capitalisation associated with labels for different timeframes, however qualifiers such as early/late/mid are not capitalised. The inconsistency with which such qualifiers can be deployed cautions against further cementing their somewhat elastic existence through gratuitous capitalisation (at least without an extensive discussion and effort at further classification, which this study does not attempt). The one exception to this rule is Late Antique/Late Antiquity, which is capitalised throughout since its identity, though malleable at the edges is a fairly fixed scholarly concept within studies of the broadly Mediterranean world. Not capitalising it would risk losing sight of the effort which has gone into defining Late Antiquity as a distinct epoch from the preceding Roman and subsequent medieval Byzantine eras. Late Antique and Late Antiquity are thus always used with this definition in mind.

## CHAPTER ONE: INTRODUCTION

### 1.1 Introduction

Indo-Byzantine exchange in the fourth to seventh centuries is a subject which has hitherto received little scholarly attention. This is in stark contrast to Indo-Roman studies, which have been and continue to be the focus of significant research. Even the term ‘Indo-Byzantine’ raises questions and challenges to existing historiography, which must be explored alongside the evidence for historical exchanges between the Mediterranean and south India in the fourth to seventh centuries A.D. For that is the underlying subject of this study: how (as ancient trade items and modern antiquities) did coins manufactured by a state governing the eastern Mediterranean come to reside in museum and private collections in peninsular India? Tracing the physical and interpretative threads which, from these artefacts, loop out across the Indian Ocean, the Persian Gulf and the Red Sea to the Mediterranean, from Byzantine state and private economic choices to the ports, religious sites and money-makers of the subcontinent, and from Renaissance scholars and classical geographers to British imperial and Indian post-colonial historiography reveals a complex and global narrative. In dealing with all of these intersecting forces, this study maintains a tripartite focus on the reception of evidence for Mediterranean-Indian Ocean contact, the limits of the available evidence, and the impact of interpretative models on the field of Byzantine trade with south India. Using fourth- to seventh-century coins found in India, many of them unpublished, as a centre-point, these themes are used to situate Indo-Byzantine trade within the larger fields of Byzantine and south Indian historical studies.



**Fig. 1.1:** Map showing regions of focus and a selection of major sites discussed.<sup>1</sup>

In addition to coins other categories of evidence and dissections of later interpretation also support an answer to the question of how fourth- to seventh-century coins from the Roman Empire came to India. The coins themselves are examined in detail in chapter five. Close focus on the collections to which these coins belong, their preservation and publication and the minute aspects of their manufacture and use enable a microcosmic examination of all three strands of this study: the reception within historical studies of evidence for Roman connections with India, the nature and often ambiguous

<sup>1</sup> All maps used in this thesis, unless otherwise stated and credited, were produced by the author using ArcMap (a component of ArcGIS, ESRI (Environmental Systems Resource Institute). 2009. ArcMap 9.2. ESRI, Redlands, California). All maps in this thesis, including where otherwise stated and credited have been modified by the author using GIMP open-source image manipulation software (<http://www.gimp.org/>, downloaded 2010).



testimony of that evidence, and the interpretations suggested by it. In this respect their examination mirrors the organisation of this thesis as a whole.

Following this introductory chapter, chapters two, three and four deal primarily with the issue of scholarly receptions to the discovery of evidence for Roman contact with India. Chapter two surveys the extensive historiography of Indo-Roman studies and the distinction between Indo-Roman and Indo-Byzantine, which this thesis ultimately argues should be dissolved into a focus on pre-Islamic trade in the Indian Ocean. It highlights the close relationships between modern imperial structures and historical assumptions which continue to shape the discipline of Indo-Roman studies. Such a historiographical survey is necessary not merely to situate the fourth- to seventh-century evidence in its wider scholarly context but to expose persistent interpretative devices which hamper Indo-Roman studies and which a refocusing on the comparatively ignored later evidence will help to correct. It is also crucial for understanding why the fourth to seventh centuries, which in light of the physical evidence present a continuity with the period normally covered by the term 'Indo-Roman', have nevertheless received so little attention.

Chapter three uses two textual sources (arguably the most important, certainly the most oft-cited of the very few which speak explicitly of Indo-Roman or Indo-Byzantine contact) to demonstrate the impact of historiographical trends on the reading of evidence. Close analysis of the publication, reception and content of the first-century A.D. *Periplus of the Erythrean Sea* and Book Eleven of the sixth-century *Christian Topography* demonstrates how changing interpretations of textual genre and transmission impact upon the reading of these texts. In particular, this chapter seeks to address the positivist reading

which has sometimes risked presenting these texts as ‘windows’ onto pre-modern systems of trade. By refocusing on their textuality and on their similarities it is possible to trace on one hand the continuity in the Roman to early Byzantine world of ideas about India and the East and on the other hand the discrepancies which demonstrate changing economic realities. Above all, analysis of both texts reveals the importance of the ninth-century as an apparent focal point for the collecting and collating of geographical knowledge in the Greek-speaking world.

Chapter four uses a case study in material-culture to continue unpicking the existing narrative of Indo-Roman contact and trade. The kingdom of Aksum in East Africa is mentioned in both of the texts examined in chapter three, but it is understood mainly through archaeological and above all numismatic evidence. As a participant in the trade routes which connected the Mediterranean to south India, Aksum features heavily in narratives of Indo-Roman history. Yet, archaeologists working on Aksumite sites are increasingly moving away from a model of a state dependent upon external trade and culturally dependent on the Roman Empire. In Indo-Roman studies, the regular assertion that the Aksumites were ‘middlemen’ in trade with India is facing difficult questions over the meaning of this term and the articulation of such a role across time.

These debates are outlined and the evidence for them creates a background to a re-evaluation of a perennial claim within the numismatic literature, that Aksumite coinage was created to facilitate Roman trade with India, demonstrated by its iconographic and above all metrological parity with Roman coinage. A survey of the iconography and archaeological distribution of both precious and base metal issues is used to argue that

such an interpretation demonstrates a further case of Indo-Roman interpretative paradigms shaping the reading of ambiguous evidence to fit a preconceived view of the centrality of the Roman Empire to the development of surrounding cultures. Instead of viewing Aksumite gold coinage as greasing the wheels of global commerce and diplomacy with Rome, it is better viewed as prestige coinage, imitative of Roman models insofar as Rome was the preeminent imperial model available but also demonstrative of a high level of creative confidence. It also appears to have been designed primarily for Aksumite use. The copper and silver coinage seems to have sustained a remarkably complex level of monetization in East Africa, which has perhaps been underestimated in its significance in the pre-modern world precisely because of the undue gravitational pull of Indo-Roman trade in responses to it.

As outlined above, chapter five places at the centre of Indo-Byzantine exchange the most unequivocal evidence for contact between the Mediterranean and the Indian Ocean in Late Antiquity: the late Roman/early Byzantine coins found in south India. Close examination of these coins suggests modifications to the narrative structure developed in Indo-Roman studies. Chapter six turns to the Red Sea and the Persian Gulf to survey how the increase in archaeological explorations of Roman, Byzantine and (to a lesser extent) Sasanian coastal sites contributes to a picture of exchange between south India and the Mediterranean. This archaeological evidence is already revealing significant evidence in support of the revisions to models of trans-regional exchange suggested in chapter five. The interpretation of this evidence also demonstrates the dogged persistence of old narratives and the need to reframe the narrative of Indo-Roman exchange around a geographically and chronologically broader view of pre-Islamic Indian Ocean trade.

Finally, chapter seven takes the same approach as the previous chapter to re-examine the archaeological evidence, old and new, from peninsular India for Indo-Roman and Indo-Byzantine exchange. In particular, it focuses on the archaeological investigations at Arikamedu, Azhagankulam, Kaveripattinam and the site of Pattanam on the coast of Kerala. All of these sites have been publicized as Indo-Roman ports. Questioning the utility of that designation and bringing in the evidence of the distribution of Roman and Byzantine coins in the landscape of south India, this chapter argues that while the need to situate south Indian history and archaeology in the context of Roman history had scholarly justification as well as contemporary logic when Arikamedu was first excavated, it is no longer clear that Roman trade was the dynamic force driving the creation and maintenance of these ports. Set against the extremely limited reconstruction of fourth- to seventh-century south Indian history, for which the archaeological and literary sources are both scarce and complex, it is nevertheless possible to sketch an alternative context for these ports in the hope that this will gain solidity as investigations continue at inland sites in the subcontinent and at other coastal sites in southeast Asia.

Chapter eight concludes the discussion of varied categories of evidence by returning to some of the new interpretative trajectories proposed in chapter five for Indo-Byzantine and, by extension, Indo-Roman trade. It also draws out the implications of this re-evaluation of Byzantine coins in south India for larger considerations of global history and post-colonial representations of the pre-modern world. Methodologically, it suggests as the two main conclusions of this thesis that the tradition of multi-disciplinary scholarship which has characterised Indo-Roman studies from its inception needs now to temper such an approach with greater awareness of the fragility of the many evidence

types which are drawn into historical debates. As scholars in numerous disciplines and from distinct regional specialisms need increasingly to rely on one another's conclusions in order to synthesise the large quantities of available data it is imperative that scholars be clear in their own conclusions about the limitations of their evidence and the security of their interpretations. In addition, with its strongly international composition, the study of pre-Islamic contact between the Mediterranean and the Indian Ocean provides an excellent starting point for experimenting with the creation of a global historical methodology that is globally inclusive. Global history is currently dominated as a discipline by scholars from the western academy, as a result to a large extent of practical obstacles such as travel and access to bibliographic resources which impede both western scholars and academics from the global south. New technologies and flexible approaches to the management of evidence, already being developed, for example at sites such as Pattanam in south India provide possibilities for increasing communication between scholars from different regions, and the sharing of resources and data.<sup>2</sup>

Historically, the analysis of evidence and reception outlined above demonstrates that the distinction between Indo-Roman and Indo-Byzantine studies is not useful. Though contact between the Mediterranean and India did change between the first and seventh centuries A.D. it did so in ways which resemble the development of a single system, rather than two distinct historical processes, and in any case, these changes are evidenced by a body of material which is already used by scholars to approach the entire course of first- to

---

<sup>2</sup> HINARI, the Access to Research in Health Programme also illustrates the possibilities for data sharing in future academic research. Though this scheme, whereby registered institutions in countries designated by the UN as being of low or the lowest economic development are provided with free access to large repositories of new research and the right to apply for libraries elsewhere for copies of this material without incurring copyright fees, is designed only to facilitate the sharing of medical research it provides a model which could be modified more widely in the global academy and among publishers. <http://www.who.int/hinari/en/> (accessed 30/04/2014).

seventh-century contact between Rome and India. While heuristically necessary in this study in order to foreground the later evidence and expose some of the recurring patterns in approaches to the earlier material, further examination of these pre-modern maritime contacts would be better served by a holistic focus on pre-Islamic contact between India and the west, since it is the ninth century and the rise of Islamic maritime trade (and a large concomitant body of new evidence) which marks a significant shift in patterns of trade.

Of this pre-Islamic trade, three features emerge strongly from the evidence examined. First, despite the claims of a historical literature, which often seeks to cast it as being of great significance to the cultures involved, nothing suggests that trade between the Mediterranean and the Indian Ocean was anything but peripheral to any of the states engaged in it (Rome/Byzantium, Aksum, Sasanian Persia, any of the south Indian states or Sri Lanka). While on its own terms this trade constitutes a fascinating chapter in narratives of trans-regional contact, it must be contextualised against a backdrop of states whose existence, prosperity and, therefore, political and economic will seems to have been unequivocally linked to military power and agricultural capacity. Second, the evidence examined here lends support to the growing movement away from interpreting contact between the Mediterranean and India primarily in light of Roman agency. Rather, a combination of new archaeological evidence from southeast Asia, re-analysis of well-known textual sources and the close examination of the coins from south India suggests that Roman contact with India can only be understood in the context of wider, pre-existing networks of communication and trade which linked India, Sri Lanka and southeast Asia. Finally, the Persian Gulf, and the coastal people of the Arabian Peninsula and the Sasanian Empire emerge as the significant space at the heart of this thesis. Textual evidence

suggests the significance of the Persian Gulf as a probable meeting point for east-west trade and the involvement of Persians in this trade. Archaeological and numismatic evidence, however, do not yet support such a picture. In the case of archaeological material, the difficulties of excavating in this region in recent decades have contributed to a general lack of information, but newly published results, for example from Siraf are beginning to suggest that lack of evidence is not merely a product of lack of exploration. Numismatically the absence of Sasanian coins from the areas with which Persia appears in the textual sources to have traded is an ongoing mystery. The absence of Sasanian coins from south India especially may reflect Indian merchants travelling to Persia, rather than vice versa, and bartering for goods not coin, but this remains speculation. As chapter six details, the continued examination of Persian economic and state structures is likely to be one of the most significant avenues for further research into pre-Islamic trade between India and the west.

Following the substantive chapters of this dissertation is a catalogue of the unpublished late Roman/Byzantine coins found in south India in the Akki Alur hoard and the Madras Government Museum collection. A recurring theme throughout this thesis is that multi-disciplinary and trans-regional scholarship is vital to understand pre-modern Indian Ocean trade networks, but such scholarship is often hampered by mutual lack of understanding of the conventions and parameters of study, which define particular subjects or regional traditions of knowledge. The appendices attached to this study are designed as far as possible to facilitate broad engagement with the subject by providing sufficient background for scholars with varied disciplinary training to contextualise the points made and approach them critically. As such the appendices constitute a methodological

component of the study – they represent the practice as well as the theory of multi-disciplinary study. A glossary of technical terms and a tabulation of the published material used to construct tables in chapter five are intended to allow rapid referencing of unfamiliar terms and dispersed publication histories.

## 1.2 Geographical and political terms

Before embarking on an examination of the evidence for Indo-Byzantine exchange various political, geographical and chronological labels are in need of examination and justification. Any study of long-distance trade is liable to the difficulty of generating useful but not overly suggestive shorthand terms for regions, political structures and historical periods, which are likely to shift from one discipline or sub-field to another. In the east Mediterranean, for example, the fourth to seventh centuries may commonly be termed late Roman or early Byzantine, while in south India the same centuries may fall under the heading of early historic or *Cankam*.<sup>3</sup> Even these are generalisations, however. Within the east Mediterranean sphere one regional variant is that according to Israeli archaeological conventions the period is referred to as late Byzantine.<sup>4</sup> That the fourth to seventh centuries were a time of significant political restructuring and inter-state competition throughout the area covered by the trade routes under study complicates matters further (outlined where relevant throughout this thesis). I therefore prefer regional labels rather than geo-political terms linked to state structures. In particular, I use the terms

---

<sup>3</sup> Clark (2011) 1 discusses the comparatively recent development of the term 'Late Antiquity', but early Byzantine continues to be used, especially in literature dealing with coin finds, for example, Carson (1980) and Hahn (1988). In south India Abraham (2009) uses the term 'early historic' to describe the site of Pattanam. Nilakanta Sastri (1976) 2-3 adopts the label of the 'Sangam epoch' for at least the first three centuries A.D.

<sup>4</sup> For example, Schwarz (1991).



‘Mediterranean’, ‘Red Sea’ and ‘Persian Gulf’ as shorthand terms for, respectively, the Roman Empire as the western terminus of the trade routes discussed, the Egyptian regions of the Roman Empire which were most involved in that trade (including the population of this region) and the Sasanian Empire insofar as sections of its population participated in trade with India. In the latter case, the term ‘Persian Gulf’ is also used to distinguish the Sasanian Empire as a political actor in the form of a polity with its capital at Ktesiphon and possible trading relationships with India carried out by people living around the coast of the Persian Gulf. Chapter six explores in greater depth the difficulty of piecing together the relationship of the Sasanian state to the regional trade structures of the Persian Gulf. Finally, the term ‘Indian Ocean/Indian Ocean region’ is used frequently in this thesis to denote the various coastal communities, which participated in trade along routes which ultimately included the Roman Empire. Most commonly ‘Indian Ocean’ in this thesis refers to evidence relating to India since signs of Roman contact with other parts of the Indian Ocean are minimal, but the term may include Sri Lanka, the coast of Malaysia, Indonesia, Java etc. and intermediate locations such as Sokotra.

While regional terms are usually preferred when discussing state structures, since they do not draw unwarranted conclusions about the relationship of trade to political forces, there are times when polities and states are the focus for discussion. In particular, the gradual evolution of a state known historiographically as Roman to one commonly termed Byzantine is relevant to the distinction made here between Indo-Roman and Indo-Byzantine and is more widely relevant to understanding the seventh-century watershed of this project. The precise distinction between Indo-Roman and Indo-Byzantine as labels for distinct historical periods is discussed in chapter two, but here in order to frame the

narrower discussion of trade with India a background summary of Roman/Byzantine history of the fourth to seventh centuries is warranted.

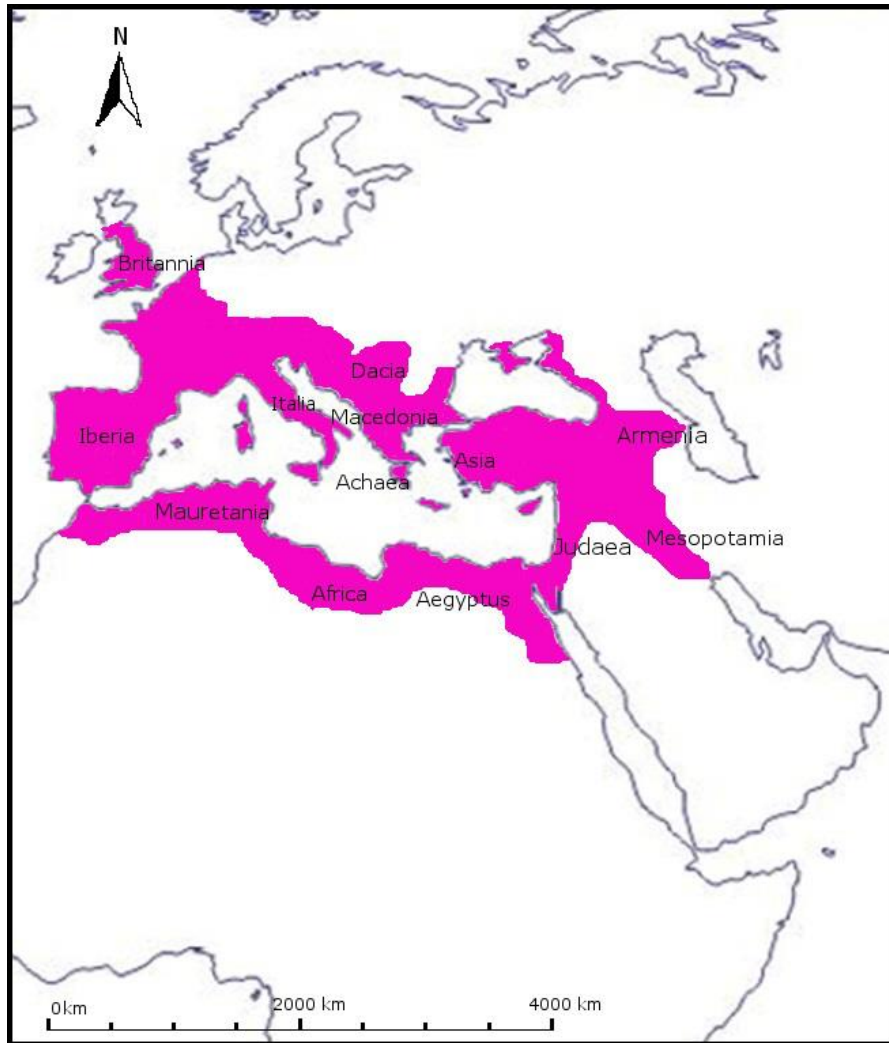
The fourth to seventh centuries represent a period of striking social, political and economic change in the Mediterranean. At the turn of the fourth century the Roman Empire was still a single political entity stretching from Britain and the Iberian Peninsula in the west to the Rhine in the north, the Sahara in the south and the Mesopotamian border with the Sasanian Empire in the east. The entire Mediterranean was, therefore, at least theoretically part of a single united and tightly linked state.<sup>5</sup> Economic ties meant that the elites of the Empire might hold lands widely dispersed across this area, and goods, ideas and people moved freely around the Mediterranean in volumes remarkable for a pre-modern period.<sup>6</sup> At an administrative level, Latin created a *lingua franca* linking not only governmental structures, but also an educated, aristocratic elite, which supplied personnel for the upper levels of the administration, and also constituted itself as a group identified by access to enormous resources and a shared cultural framework, rooted in literature and rhetoric.<sup>7</sup>

---

<sup>5</sup> For territorial changes to the Byzantine Empire see Haldon (2005). The plethora of publications dealing with Roman history up to *c.* A.D. 300 is dizzying, but a good survey and point of orientation is provided by volumes 9-12 of the *Cambridge Ancient History*: Crook, Lintott and Rawson (1994), Bowman, Champlin and Lintott (1996), Bowman, Garnsey and Rathbone (2000) and Bowman, Cameron and Garnsey (2005).

<sup>6</sup> Wickham (2005) 155-68 on the aristocracy of the Roman Empire provides a survey of senatorial wealth and patterns of widely distributed landholding, which characterised the uppermost strata of imperial Roman society.

<sup>7</sup> Hingley (2005). Chapter three discusses the cultural premium on Latin and elite education. Schatzman (1975) discusses senatorial wealth and the involvement of the senatorial class in government.



**Fig. 1.2:** *Map of the Roman Empire c. A.D. 116.*

Although all part of a single empire, however, this Mediterranean super-state was extremely diverse and politically decentralised. The Roman Empire had always incorporated a high level of social diversity, including different linguistic groups and members of different religions.<sup>8</sup> The traditional religion of the Roman Empire was flexible enough to incorporate many of the beliefs of groups brought into the Empire over the centuries, syncretising local traditions and fitting them into an imperial religion loosely

---

<sup>8</sup> Wickham (2005) 62-9 provides a summary of the responsibilities of the *curiales* who raised taxes, and the end of their responsibilities. Eckhardt (2010) contains various studies of linguistically and culturally diverse groups and their position within the Roman Empire.

focussed on the cult of the emperor, but otherwise quite diffuse and regionally distinct.<sup>9</sup> There were exceptions. Judaism stood apart as Jews would not sacrifice to the emperor or other imperially sanctioned deities. They were, however, accepted as adherents to a faith of recognised antiquity.<sup>10</sup> Other groups, which refused to participate in the imperial cult, including Christianity, and the dualist Manichean faith, opened themselves to varying degrees of repression, persecution or social exclusion (the extent of which has, however, tended to be exaggerated by later Christian hagiography, and should not be overstated).<sup>11</sup>

Politically, the empire had since the first century been ruled from Rome by a single autocrat.<sup>12</sup> As a consequence of the crises of the third century, however, when the Empire was threatened on multiple fronts, this was changed.<sup>13</sup> Diocletian, an emperor selected on the basis of a strong military background rather than any aristocratic or hereditary credentials, divided the rule of the Empire between four men. Two Augusti ruled as technical equals (though the Augustus of the East retained the apparent status of ‘first among equals’), one in the west and the other in the East. Each Augustus selected a Caesar as his subordinate to decentralise political power still further.<sup>14</sup> These four rulers presided over their territories from a variety of major cities, which could be considered capitals, including Trier and Milan in the west and Antioch in the east.<sup>15</sup> This system was designed

---

<sup>9</sup> Price (1984) on the imperial cult in Asia Minor. Taylor (1985) on the cults of Ostia including the imperial cult. Turcan (2000) on everyday religious practice in the Roman Empire provide a useful overview of the themes of regionalism, syncretism and the universal importance of the imperial cult.

<sup>10</sup> On Jews and their status (at times both protected and persecuted) in the Roman Empire see Lieu, North and Rajak (1992) and Smallwood (1976).

<sup>11</sup> On Manichaeism in the Roman Empire see Lieu (1985). On Christian martyrdom in the Roman Empire, and the construction of narratives of martyrdom by the early Christian community see Bowersock (1995).

<sup>12</sup> See Crook, Linott and Rawson (1994) for the end of republican government and the beginning of imperial Rome.

<sup>13</sup> See Bowman, Cameron and Garnsey (2005), for the crisis of the Roman Empire in the late second and third centuries.

<sup>14</sup> On the tetrarchic system see Rees (2004).

<sup>15</sup> Rees (2004) 27-30 summarises the tetrarchic capitals and their relationship to Rome.

to solve two distinct problems: first, it divested a high level of power and autonomy upon four different individuals. At times of crisis (especially military threats to the empire), this system enabled the empire to react more flexibly and quickly, moving armies from capitals located nearer to the imperial borders, and giving authority to respond to multiple individuals with (supposedly) clearly demarcated spheres of control. Second, it provided a secure succession, as the Augusti in each half of the Empire would be succeeded by the Caesars, who would in turn select their own Caesars. This theoretically avoided the bloody, regular and highly disruptive civil conflicts, which had characterised succession throughout the troubled third century. This system was called ‘Tetrarchy’ (rule of four).

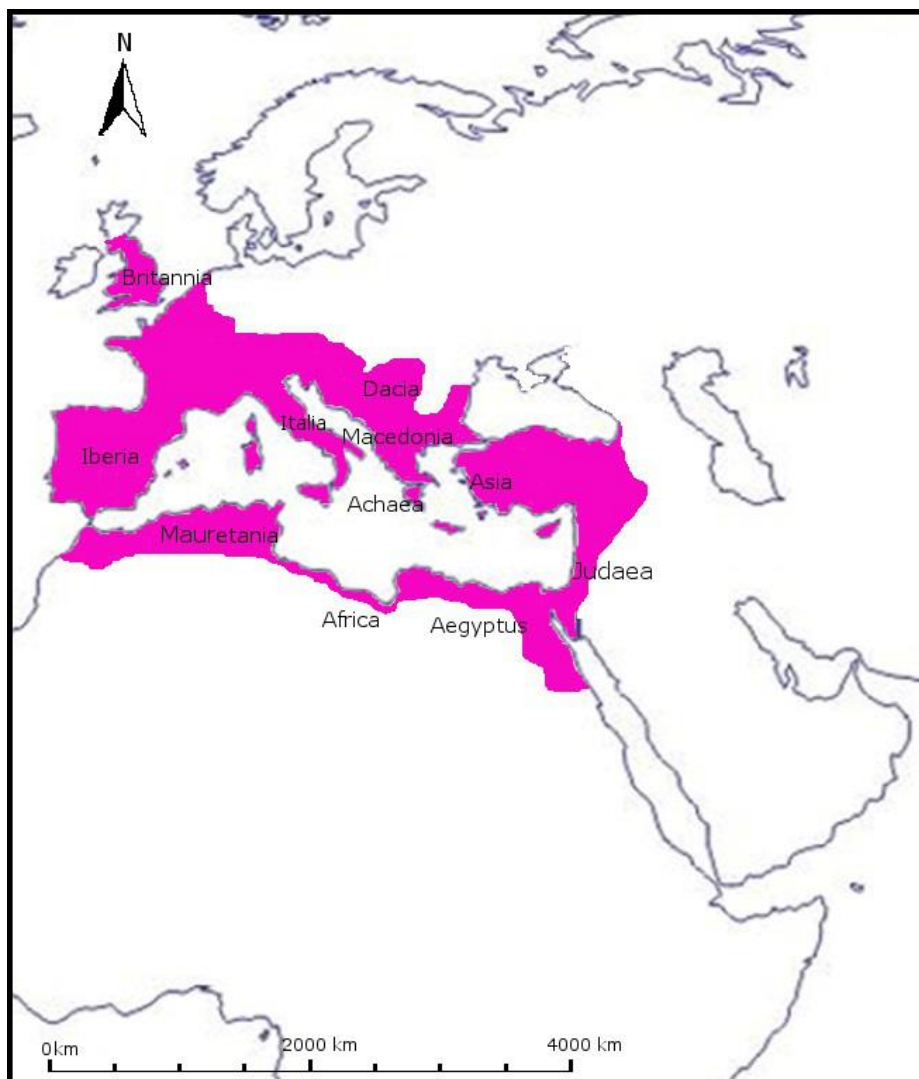
The Tetrarchy did not last long but in A.D. 300, when this study begins, it was a functioning system which had given the imperial system a respite from civil and external war, but which had also increased the gap between the imperial incumbents and the elites of the Empire. The Tetrarchs were powerful and increasingly distanced themselves both by ceremonial and by the actual exercise of power from those beneath them.<sup>16</sup> In A.D. 306, however, following the death of Constantius Chlorus, the Augustus in the west, the army elevated Constantius’ son, Constantine, as emperor, rather than accepting the succession of the Caesar in the west. His subsequent military victory over the remaining tetrarchs, and others who joined the growing civil war reunified the empire by 324 under a single autocrat.<sup>17</sup> Following his accession to sole authority, Constantine made the decision to translate the official capital of the empire from Rome to a city re-named for him: Constantinople. Based on the site of the ancient Greek settlement of Byzantium, and located at the juncture of the Black Sea and the Aegean, on the boundary between Europe

---

<sup>16</sup> Zoch (1998) 283.

<sup>17</sup> Corcoran (2012) details the second-century crisis and the tetrarchic system as the preface to Constantine’s rule.

and Asia, this city was to become the heart of the eastern empire, which has come to be referred to by historians as Byzantium. This movement of the capital was motivated partly by the continued strategic weakness of Rome as a capital and may have been partly a response to tensions between Constantine and the Roman senatorial elite.<sup>18</sup>



**Fig. 1.3:** *Map of the Roman Empire c. A.D. 300.*

<sup>18</sup> The introduction to Grig and Kelly (2012) 3-31 details the historical background to the foundation of Constantinople and some discussion of the way in which scholarship of the city has played a part in separating the historiography of the Roman and Byzantine empires (3-6).

The movement of the capital to Constantinople was one of Constantine's most obvious and lasting legacies. The other significant act of Constantine I was the legitimisation of Christianity within the Roman Empire. Constantine's conversion (or non-conversion) to Christianity has been debated extensively, but it is clear that Constantine from around A.D. 312 treated Christianity as a tolerated religion, with which he sought in many capacities to associate himself.<sup>19</sup> Apart from a brief official return to the traditional Roman religion under Julian I (A.D. 361-3) the descendants of Constantine inaugurated an official policy of Christianisation, which ensured that by the early sixth century, the Empire was almost completely Christian and had developed an ideology of Christian rulership which would be fundamental to the Byzantine Empire thereafter. For a survey of the Mediterranean infrastructure of long-distance trade, the shift to a capital based at a unique point of intersection between Europe and Asia, with clear water routes north and south seems of obvious significance, however, it is unclear from the surviving evidence of Mediterranean contact with India what effect (if any) this actually had on these easternmost trade routes.

It was not only civil war which affected the empire dramatically between the fourth and seventh centuries. At various points up to the mid-seventh century, war with Persia, with Goths from the northwest of the empire (especially during the fourth and fifth centuries) and with Slavic groups, such as the Avars, caused periods of destabilisation and drained the empire's resources.<sup>20</sup> Other forces which contributed to instability and threatened the prosperity of the Empire included the first outbreak of bubonic plague in

---

<sup>19</sup> Edwards (2012) provides a background to the beginnings of Christianization under Constantine I.

<sup>20</sup> Greatrex and Lieu (2002) details fourth- to seventh-century tensions along Rome's eastern frontier and the empire's wars with Persia. Gilliver, Goldsworthy and Saylor (2005) 209-10 for a summary of Rome's wars with the Goths and Avars.

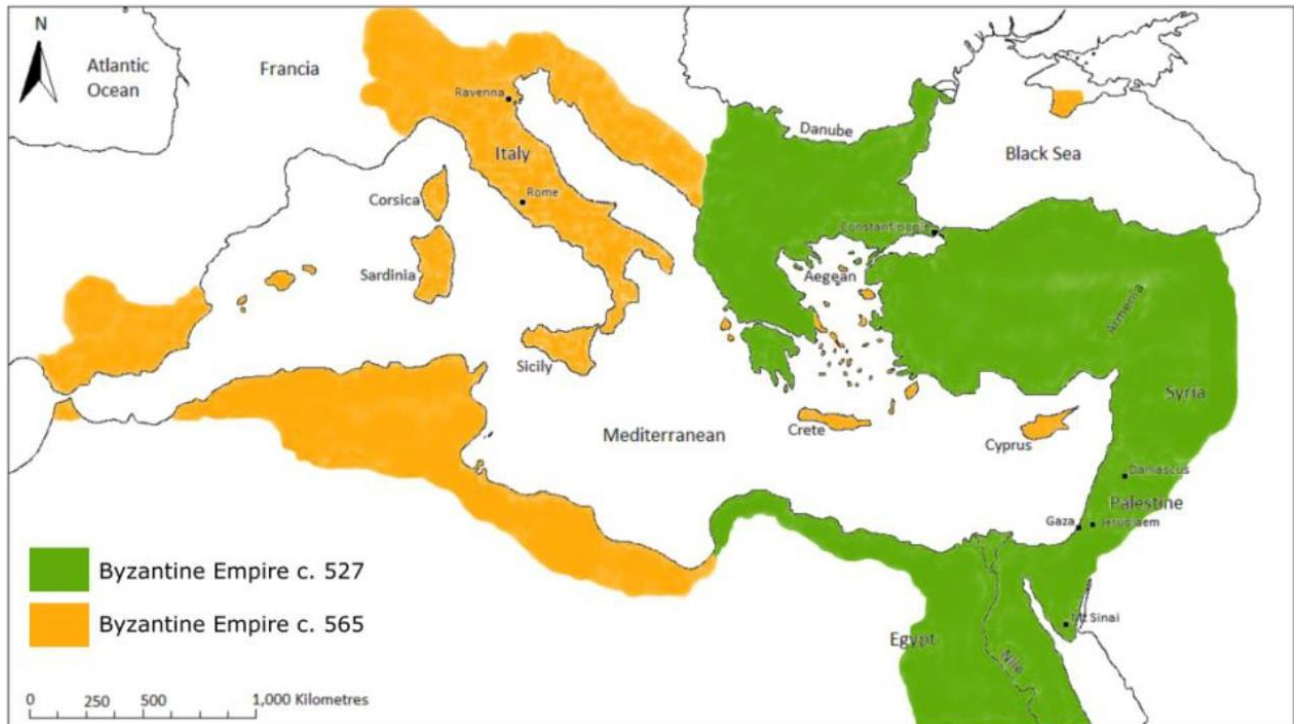
A.D. 542, causing devastating losses, vividly described in surviving sources. The plague was to continue to recur, though not again as virulently, throughout the period under study.<sup>21</sup> The mid-sixth century (A.D. 536) also witnessed a major environmental crisis, visible in the dendrochronological records of Ireland, the Mediterranean and North America. This occurrence, increasingly regarded as the result of a massive volcanic explosion (of unknown whereabouts) generated marked climate change and is recorded in the surviving sources as precipitating famine, disease and ideological shock. The ramifications of this crisis are still unclear, with the recent survey of Mediterranean evidence by Arjava concluding that it may in fact have had negligible effect at the time but its possible contribution, especially to a trade highly dependent upon regular weather patterns, should not be disregarded entirely.<sup>22</sup>

---

<sup>21</sup> Dols (1979) refers to the impact of bubonic plague in the Middle East in Late Antiquity. Stathakopoulos (2004) is valuable not only for specific details of the sixth century outbreak and impact of plague, but also for its more general perspective on the systemic impact of natural crises on Late Antique society. Prokopios, *History of the Wars* 2.22 includes the laconic summary: 'During these times there was a pestilence, by which the whole human race came near to being annihilated'.

<sup>22</sup> Arjava (2005).



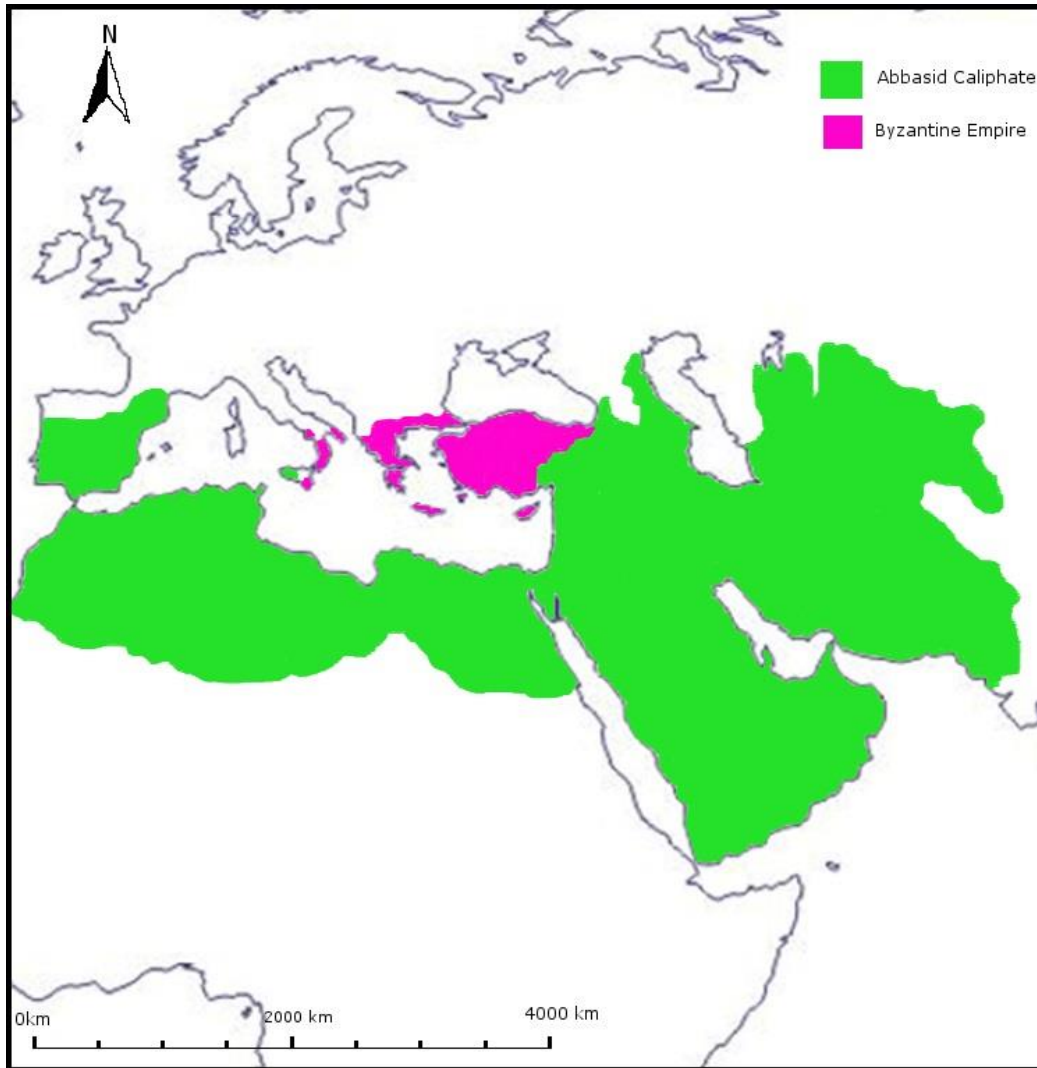


**Fig. 1.4:** Map of the Roman Empire at its greatest extent under Justinian I (c. 565).

The seventh century, which forms the end of this thesis, brought about the most dramatic changes in the Mediterranean region. The rise of Islam in the first quarter of the seventh century changed the political map of the region permanently. The Byzantine Empire lost over two thirds of its territory, including its richest provinces of Egypt and Syria, and was challenged by a new state, which had at its heart a religio-political ideology directly opposed to the Christian Byzantine Empire.<sup>23</sup> The Mediterranean had largely changed hands, with most of its east coast and its links through the Red Sea and the Persian Gulf to the east controlled by the Muslim Caliphate. Though the Byzantine Empire survived this threat it did so by streamlining and centralising as a state. It would not again be in direct contact with the east and by the ninth century it was the Muslim Caliphate

<sup>23</sup> Haldon (1990) remains the best systematic survey of the changes brought about in the Byzantine Empire as a result of the rise of Islam and changes in the structure and ideology of power.

which was unquestionably the dominant Mediterranean power and the only viable major trading partner with the east.<sup>24</sup>



**Fig. 1.5:** *Map of the Roman Empire and the Abbasid Caliphate c. 800, after the expansion of the Caliphate into North Africa and the Iberian Peninsula, and following the consolidation of the initial conquests of the Umayyad Caliphate in the Levant, Egypt, the Arabian Peninsula and the Near East.*

Though the fourth to seventh centuries were certainly a period of major transition they were not a period of unmitigated or universal instability and disintegration. There

<sup>24</sup> Hourani (1995) is the foundational study of the post-ninth-century networks which turned the Indian Ocean into a thriving maritime trading space.

were periods or regions of stability, expansion and prosperity, and not all restructuring is negative. The reign of Theodosius II (A.D. 401-450), for example, witnessed wars with Persia and the Huns, but is also marked by economic indicators of prosperity and growth, including investment in state projects, such as Theodosius' sponsorship of the creation of a new codification of the laws, the construction of the Theodosian walls of Constantinople and the building of a new harbour in Constantinople.<sup>25</sup>

The end of the fifth and beginning of the sixth century witnessed another period of marked prosperity under Anastasius I (A.D. 495-518) and Justin I (A.D. 518-527), culminating in the lengthy and dramatic reign of Justinian I (A.D. 527-565). Anastasius was a capable administrator, who reformed the currency of the empire and left the imperial treasury well-stocked upon his death.<sup>26</sup> The reign of Justin I seems to have been heavily influenced by his nephew and heir, and certainly continued the trend of replenishing the empire's resources. This made possible the ambitious projects undertaken by Justinian I from 527 onwards, including massive building projects and wars to bring Italy, Spain and north Africa back under imperial rule.<sup>27</sup> These projects coincided with the outbreak of plague in 542 and the sixth-century environmental crisis, generating a perception that the mid-sixth century marked the beginning of the end of the late Roman phase of the empire. The transformative crises of the seventh century ultimately produced the medieval empire which would survive until 1453, but Justinian's stretching of imperial resources nevertheless marks a major watershed in imperial fortunes, the significance of which for

---

<sup>25</sup> Kelly (2013).

<sup>26</sup> Lee (2013) 163.

<sup>27</sup> Sarris (2006) provides the most up-to-date assessment of the economic developments in the reign of Justinian.

Indo-Byzantine exchange cannot be overstated and should not be overshadowed by or subsumed into the seventh-century transformation.

Geographically and politically, therefore, the terms Roman and Byzantine are moving targets throughout the period under discussion. The transition from Roman to Byzantine in particular is placed variously within historical literature at the reign of Constantine I, the changes in the empire brought about by Justinian I, and the transformation of the seventh century. Meanwhile numismatically the traditionally recognised shift from Roman to Byzantine coinage (though this was not perceived as a break with tradition by contemporaries) lies in 498 with the coinage reform of Anastasius I.<sup>28</sup> Throughout this thesis, therefore, when referring to the state and its coinage, the term ‘Late Antique’ will be used. For the coinage in particular this avoids drawing an artificial distinction between coinage produced before or after 498 or introducing further confusion by referring to coinage commonly termed Roman as Byzantine or vice versa. With respect to the political entity based in the east Mediterranean, the terms Roman and Byzantine are used interchangeably, though the term Roman tends to be preferred whenever explicit continuity with the first to third centuries is under discussion. Such a fluid solution is preferable to the creation of hard definitional boundaries which are not only artificial but add further fuel to a debate over periodization which contemporaries would most likely not have understood in any case.

---

<sup>28</sup> Grierson (1999) 1-2 outlines the usual periodization used in late Roman and Byzantine numismatics and the developments which led to these divisions.

### **1.3 Chronological terms – Indo-Roman to Indo-Byzantine**

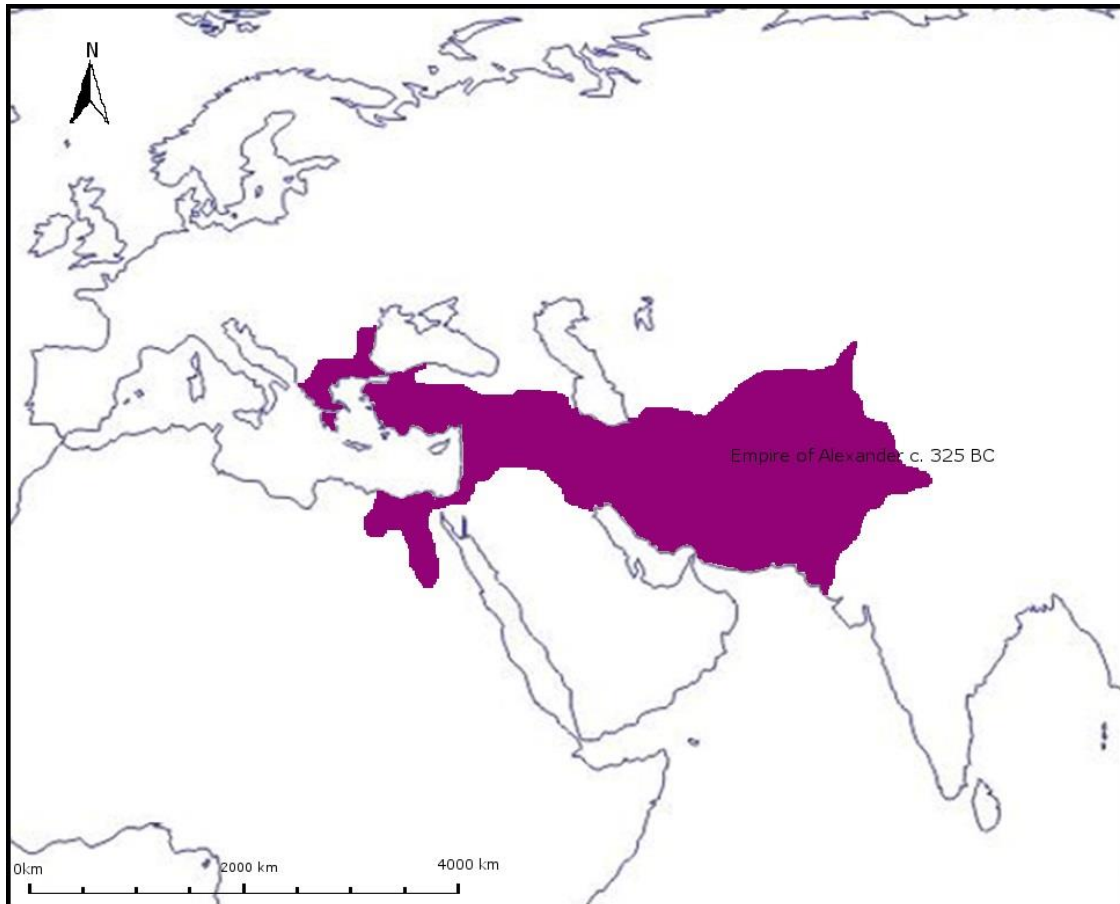
Having said that Roman and Byzantine may be used interchangeably to refer to the state, which had its capital at Rome then Constantinople between the fourth and seventh centuries, it is necessary to draw a more solid (though still not impermeable) boundary between Indo-Roman and Indo-Byzantine studies. That necessity derives from the existing periodization of scholarship, which has, however, not been well theorised or justified. Overall, this thesis argues that ultimately the distinction between Indo-Roman and Indo-Byzantine exchange should be abandoned in favour of a much broader discussion of pre-Islamic trade between the Mediterranean and the Indian Ocean. Meanwhile, to retain focus on the neglected fourth to seventh centuries, the previous three hundred years of Roman contact with India will be termed ‘Indo-Roman’ in accordance with most existing scholarship. The historiographical background to this awkward but necessary convention is discussed in chapter two. Nevertheless, for the purposes of periodization it is here worthwhile sketching the known trajectory of contact between the Mediterranean and the Indian Ocean up to *c.* A.D. 300 as a framework for discussion. As chapter two will demonstrate, separating this historical background from its historiographical framework is remarkably difficult, but eschewing a factual survey altogether only makes the task of identifying continuities and differences between the Indo-Roman and Indo-Byzantine phases of trade even more difficult than is already the case given the state of the surviving evidence.

Direct contact between the Mediterranean and the Indian subcontinent appears to have begun with the campaigns of Alexander the Great. Using the land route through

modern Afghanistan Alexander reached the land which became known as India in Greek and which included the entire area east of the Hindu Kush, now shared by the states of India and Pakistan. Alexander's land campaign ended at the Indus River but he also sent a naval fleet under the leadership of his general, Nearchos, to explore the possibility of a southerly sea route into the Arabian Sea and back along the coast of Persia to the Persian Gulf. The surviving account of the voyage of Nearchos preserved in Arrian's *Indica* constitutes the first narrative source relevant to the maritime routes between the Mediterranean and India under discussion here.<sup>29</sup> Though Alexander's campaign sparked interest in India and expanded knowledge of, among other things, the goods which could be obtained there, trade relations between the Mediterranean and India remained minimal. After Alexander's death and the break-up of his empire contact with India continued but regularised trade routes carrying sufficient volumes of material to have a noticeable impact upon the surviving material culture of either India or the Mediterranean region did not develop.

---

<sup>29</sup> On Alexander's campaign in India Narain (1965) remains the most coherent narrative reconstruction and assessment of its long-term impact.



**Fig. 1.6:** *Map of the extent of the campaigns of Alexander the Great c. 325 B.C.*

By the first century B.C. Egypt and the Red Sea route to India lay in the hands of the Ptolemies, who seem to have worked to maintain ports along the Red Sea in order to transport valuable war elephants from their more southerly African haunts.<sup>30</sup> In northern India various Greek-speaking ruling elites issued coins and appear to have led states from the fourth to the first centuries B.C. and the artistic style known as Gandharan, which mixed Indian and Greek motifs and techniques, testifies to further cultural syncretisation between India and the Mediterranean.<sup>31</sup> These cultural phenomena, however, seem to have

---

<sup>30</sup> Sidebotham (1986c) 287.

<sup>31</sup> The historiography of the Indo-Greek kingdoms is complex and contested, primarily owing to the difficulty of reconstructing political and social history almost entirely from coin finds, but Tarn (1938), Narain (1980) and Karttunen (1997) remain the most important works for their efforts to synthesise sources and for their distinct theoretical and ideological approaches.

been supported only by a small-scale landward trade network and otherwise appear to have been the product of internal developments stemming from the population movements inaugurated by Alexander. That such syncretic blending of Mediterranean and Indian cultural practices had occurred is a useful warning against seeing trade as the underlying mechanism for all or most contact in the ancient world. It is also useful for understanding debates later in this thesis about the identity of people termed *Yavanas* in Indian sources and as a reminder that while the maritime routes between the Red Sea and south India are the primary focus here, the land route between India and the west, which had existed in some form from at least the fifth millennium B.C., and which definitely reached the Mediterranean by the fourth century B.C. fluctuated in its importance but never entirely dried up and represented for the most part an independent vector of communication between India and the west throughout and beyond the period under study.<sup>32</sup>

---

<sup>32</sup> Zarins (1996) uses obsidian to trace trade routes from northern India to Egypt as early as the fifth millennium B.C.





**Fig. 1.7:** *A first- to second-century Gandharan sculpture of the Buddha, exhibiting stylistic features derived from Mediterranean technique and practice, especially in the execution of the robes and naturalistic facial features.*<sup>33</sup>

---

<sup>33</sup> Tokyo National Museum, Personal photograph by [World Imaging](#) (talk), 2004. Released in the Public Domain. Accessed from [http://en.wikipedia.org/wiki/File:Gandhara\\_Buddha\\_\(tmm\).jpeg](http://en.wikipedia.org/wiki/File:Gandhara_Buddha_(tmm).jpeg) (27/06/2013).



**Fig. 1.8:** A silver drachm of the most famous Indo-Greek monarch, Menander (r. 165/155-130 B.C.), who ruled in the northern area of the subcontinent in the third century B.C. Indo-Greek coinage is characterised by the use of extremely high-quality die cutting in the Greek style (visible particularly in the portrait on the obverse, which also depicts Menander dressed in the style of a Greek/Macedon warrior king). Much Indo-Greek coinage also used bi-lingual inscriptions in Greek and Brahmi or Kharosthi to proclaim the king both in Greek and the local Prakrit.<sup>34</sup>

The advent of trade connections with India via the Red Sea, which moved sufficient goods as to be noticeable in the cultural contexts of south India and the Mediterranean, however, came with Augustus' conquest of Ptolemaic Egypt in 30 B.C. With the unification of the state under a single emperor and the stabilisation of its boundaries Augustus seems to have enabled the conditions in the form of peace and political unification (and therefore the possibility for free movement across almost the entire Mediterranean and the Red Sea) for trade to flourish.<sup>35</sup> It is silver *denarii* from the first and second centuries that occur most frequently in Indian hoards of Roman coins.<sup>36</sup> The first- and second-century A.D. writings of Pliny, Cicero and others who make casual mention of Indian goods available in Rome testify to the capacity of certain sections of the Roman population to afford eastern luxuries.<sup>37</sup> These sources and the status of Indian

<sup>34</sup> Fitzwilliam Museum Collection (Cambridge), 2.25 g, diameter 16mm. Day (2009), catalogue no. 6.

<sup>35</sup> Sidebotham (1986b) deals with the shift in policy and the rise in demand for eastern goods created by Augustus' conquest of Ptolemaic Egypt.

<sup>36</sup> Turner (1989) 16.

<sup>37</sup> Individual sources are discussed in more depth in chapter six, but Parker (2011) provides a survey of Roman sources mentioning India or Indian products.

goods in the Roman Empire are explored in chapter six, but chronologically it seems clear that the volume of Roman trade with India was at its height in the first two centuries A.D. This is the period most usually referred to by the term ‘Indo-Roman’, though the third century is commonly included as the time of decline from such prosperity. The difficulties facing the Roman Empire in the third century have already been outlined above. This seems to be reflected in a decline in coin finds in India.<sup>38</sup>

Chapter five explores further the risk of drawing hard chronological conclusions from numismatic evidence. Nevertheless, in this case the coincidence of political circumstances in the Roman Empire, textual sources mentioning the trade with India and the rise then collapse in the number of coin finds in south India suggests a genuine correlation between numismatic evidence and a period of significantly increased trade with India in the first two centuries A.D. and a dwindling of that trade in the third century. Chapter two examines how and why this point of decline has so often (but not universally) become the termination point for studies of Mediterranean contact with India, thereby necessitating the heuristic distinction between Indo-Roman and Indo-Byzantine in this thesis. The foregoing, however, should serve as a brief definition of the trade system labelled ‘Indo-Roman’ for which the present thesis forms both a sequel and a critical re-evaluation.

The *terminus ante quem* for the historical examination of trade in this study lies somewhere in the seventh century but is difficult to determine more precisely. The latest coin finds from the Indian subcontinent (see chapter five) date from the mid-seventh

---

<sup>38</sup> Turner (1989) 43-4.

century but the volume of evidence for contact diminishes sharply in the early sixth century. Between the seventh and ninth centuries there occurred a major shift with long-term implications for world trade as well as Mediterranean contact with the east: the rise of a Caliphate with control over both the Red Sea and the Persian Gulf precipitated the development of a Muslim trading network in the Indian Ocean which was to predominate until the arrival of western Europeans in the fifteenth century.<sup>39</sup> That world trading system has been the subject of far more extensive study than the circumstances of the seventh to ninth centuries which gave rise to it.<sup>40</sup> The present state of evidence does not allow a detailed reconstruction of the transition but some discussion is provided of the possible factors which may have led to the collapse of Indo-Byzantine exchange by the end of the seventh century in the fifth and sixth chapters of this thesis.

#### **1.4 Sri Lanka**

In defining geographical and chronological labels and limits it is also necessary to explain the exclusion of Sri Lanka from detailed examination. The original aim of this study was to incorporate the numismatic evidence from south India and Sri Lanka into a study of fourth- to seventh-century contact with the Mediterranean. Sri Lanka and south India seemed to represent a valuable geographical unit for such an examination of early medieval global exchange networks: they share significant cultural and historical similarities, are in close proximity to each other, and finds of coins from the fourth to seventh centuries with a recognisable connection to late Roman or Byzantine models have

---

<sup>39</sup> Abu Lughod (1989) focuses on precisely this Muslim Indian Ocean trade world, in relation to other pre-modern trading circles, to demonstrate the structure of a commercial world 'before European hegemony'.

<sup>40</sup> Boxhall (1989), Eaton (1990), Hourani (1995), Mukund (1999) minus an opening chapter on the pre-Islamic period, focuses on the ninth century and beyond, Sidebotham (1986a, 1989, 1991a), Stillman (1973), Tibbetts (1981).

been published from both sub-regions.<sup>41</sup> In both cases, these published finds represent incomplete or preliminary coverage of the material, but highlight important points of convergence and difference in the respective assemblages. Fieldwork was therefore undertaken in both south India (during three visits from 2009 to 2011) and in Sri Lanka (in 2011). As a consequence of this fieldwork, and close analysis of published material, however, it proved necessary to abandon research of unpublished material in Sri Lanka.

Whatever theories are used to interpret historical evidence, from materialist to post-modern narratives, the physical verifiability of evidence is a fundamental requirement for research. Other scholars must be able to access the evidence utilised, or if this is not possible its documentation by the researcher must be full and transparent, and as far as possible, neutral. A clear separation between the evidence used and the interpretation of it should always be the aim of historical or archaeological study. In addition, each scholar should be able to verify the place of each individual datum used within the context of their whole dataset. Where either or both of these requirements cannot be met, the research output is of arguably limited value, both to the researcher, who cannot be confident of the reliability of his or her own conclusions, and to the wider research community, which is deprived of the resources to evaluate and, if necessary, challenge the conclusions reached by the researcher based on a further analysis of the material.

Neither of these requirements of verifiable, reliable research can currently be met in the examination of numismatic evidence in Sri Lanka. The question of the existence of coins is the first major concern. Depending on the publications consulted, the number of

---

<sup>41</sup> Publications of Roman or imitation Roman coins from Sri Lanka include Bopearachchi (1992, 2006a), Burnett (1998) and Walburg (1985, 1998, 2006 and 2008).

coins of Roman or Byzantine origin or design number from around thirty to forty thousand to over two hundred thousand.<sup>42</sup> The discrepancy between these figures is a startling indication of the depth of the problems facing an evaluation of the Sri Lankan evidence. The larger figure is derived from a calculation of the number of coins in a variety of published hoards, but suffers from the problem that many of these hoards have not been seen by anybody other than the author.<sup>43</sup> The lower figure is derived from the calculation of Walburg, based on coins he was able to see and a conservative estimate of the quantity of other finds, which might reside in private collections.<sup>44</sup>

Gaining permission to view coins in Sri Lanka is extremely difficult. Roman coin finds and imitations of Roman coins are distributed between the Department of Archaeology, the National Museum in Colombo and an unspecified number of private collectors. There is no formal procedure for viewing coins in the Department of Archaeology, and the procedures for viewing coins in the National Museum of Archaeology are unclear. Access to private collections is, as in every country, subject to personal negotiations but for this reason is usually peripheral to conclusions made based on museum collections.

Permission to view coins in the Department of Archaeology or the National Museum is not, however, the only issue at stake. Having accessed these collections there is no central record in either institution of exactly which coins are in their possession. The researcher can, therefore, not be certain that s/he has viewed all of the available coins, or

---

<sup>42</sup> Boulnois (2005) 137 cites 'tens of thousands' of Roman coins found in Sri Lanka.

<sup>43</sup> Bopearachchi (2002) 106 and (2006a) 193, for example, cites over 200,000 'third brass' or imitation Roman coins found on the island though does not verify the location of these finds or their present disposition.

<sup>44</sup> Walburg (2008) 52-5.

even estimate what percentage of the surviving material is on show. In the Department of Archaeology the situation is complicated further by the fact that the coins are stored in paper packets, unnumbered and unlabelled, except for a brief description of the coin type, often in lots of several hundred coins together.<sup>45</sup> Even if a researcher records the individual details of each coin, this cannot be re-checked by the researcher, or verified by another numismatist, as there is no unique identifier attached to each coin. This study will use Sri Lankan evidence based on the published literature and comparison with the south Indian material. Until access to the material in Sri Lanka is properly procedurally regularised and the coins are recorded with unique signifiers it is the view of this study that this is the most which can be accomplished.

### **1.5 Global history through global research**

In creating models for research which begin to address unequal resources and the creation of global research communities, the integration of technology as a methodological tool is vital. Studies such as McCormick's 2001 *The Origins of the European Economy* have fostered the idea of 'connectivity' as a theoretical concept in medieval studies. This concept seeks to find evidence for movement and communication in implicit evidence, since the written sources for this period are either lacking or derived from sources uninterested in matters such as trade.<sup>46</sup> Material culture objects appearing away from their point of production and textual references to movement of goods or people therefore become indices for broader networks. It is a conceptual approach to which this study is deeply indebted, though the analysis of Byzantine coins in India also highlights some of

---

<sup>45</sup> Walburg (2008) 17-19 and personal field experience January 2011.

<sup>46</sup> McCormick (2001) Chapter 1 for methodological discussion and approach.

the challenges to using such markers, especially as evidence of the volume, nature or chronology of movement. This line of historical inquiry has also promoted heavily the value of computerised data management and analysis.<sup>47</sup> Using text databases to search for specific terms, for example, now renders comparatively trivial exercises such as quantifying use of the term ‘India’ in Greek writing of the classical and late antique periods – a study which only decades ago might have constituted several years of data collection. The growing use of GIS technology also creates new research opportunities for combining geographical data from a variety of sources and identifying correlations between topographic and human features which were never previously possible or required laborious cartographic work and the money to pay for specialist mapmakers. Chapter five demonstrates the utility of GIS technology for quickly mapping coin finds onto features such as rivers and federal state boundaries in India. Data sharing alongside data management highlights the other great benefit of technology for the developing methodology of global history. Not only does it enable the handling of large datasets, of particular relevance when dealing with trans-regional subjects, but it also enables wider and more detailed discourse with other scholars.

Web-based applications, in particular, present serious possibilities for low-cost information and resource sharing. Online publication and regulated but accessible online databases offer possibilities to narrow the gap between the discourses which are possible in western nations and beyond. The concept of possible discourses requires some explanation. The themes which take centre stage in the historical studies of any nation’s academy will, of course, be unique and intersect with the contemporary social and political

---

<sup>47</sup> McCormick (2001), Chapter 1 and appendices and the Initiative for the Science of the Human Past.



context from which the historians pursuing those studies emerge. It would be fruitless and promote an anaemic historical research environment to suggest that global history should work towards a scenario in which historians in and of India and the USA or Sri Lanka and Great Britain ask the same questions or focus on the same issues. Nevertheless, many questions overlap and multi-disciplinary approaches usually offer resources which can be applied to multiple studies and can be viewed from various perspectives. This is the realm of possible discourses.

Scholars may not use data to address the same questions but currently interdisciplinary and trans-regional studies which incorporate regions and scholars of the west and the global south are separated by the far more fundamental issue of access to that data. Generating strands of discussion which bring together the expertise of researchers in western countries and outside them, and which allow nuanced debate over the intersections between different perspectives is almost impossible when access to the most recent studies, contact with peers and the ability to examine materials is lacking.

It is often impossible for academics working outside the western nations to attend conferences and round-table discussions beyond their home countries. Even well-equipped libraries may contain few foreign publications, especially in subject areas, such as pre-modern studies in India, which are the focus of less national attention than modern history.<sup>48</sup> In particular, collections feel the absence of breadth – while national or regional histories may be comparatively well-represented, other regions of the world may be completely absent, or feature only extremely out-dated survey studies. In the case of this

---

<sup>48</sup> Chakrabarti (2003) 185-8 demonstrates the difficulty of engagement with ancient history or archaeology in the Indian context.

thesis, the impossibility was apparent of many scholars in south India contextualising evidence for Roman contact when resources dealing with the history of the Roman Empire consisted only of two or three publications over twenty years old. This is neither a criticism of these collections nor of the scholars who work with them, but it is the reality of scholarship in much of the global south. To ignore it does a disservice to the researchers who pursue historical studies within such limitations and reduces the likelihood of finding viable, long-term solutions.

Western collections in turn may be better equipped with respect to geographical or chronological breadth but show a regional bias towards western publications, due in part to the inaccessibility of publications, which are often produced in very small print runs and not broadly advertised (especially outside their country of origin), but also due to a habit of academic research which does not emphasise the need to use scholarship produced outside the western academy, and may even be hostile to it, as Chakrabarti has argued.<sup>49</sup> Such insulation of library policy prevents both discussion and the sharing of best practice. Western scholars may also avoid conferences outside Europe and the US in which relevant research is being conducted due to the difficulties of travel, the expense (which though not as prohibitive as for many scholars in the global south is far from insignificant) and the same implicit bias towards and familiarity with research communities and practices in their own or neighbouring countries. New technologies, however, offer an unprecedented opportunity, if not to remedy then to ameliorate these inequalities.

---

<sup>49</sup> Chakrabarti (2003) 220 highlights the often dismissive attitude of western scholars towards third-world scholarship.

Online resources such as Jstor and Googlebooks provide a sizeable body of recent and broad western scholarship. The question of open access to journal content is a debate currently raging in the British academy with important implications for foreign publication by British scholars and access to British journal publications.<sup>50</sup> It seems clear, however, that online publication with some free or subsidised access is a likely outcome which may further enhance access by scholars worldwide to current research. The internet also enables book sourcing within countries by companies specialising in locating obscure or limited-run publications for shipping overseas. These specialist purveyors of limited-run publications provide an opportunity for libraries in the western world to increase their holdings of foreign publications and broaden the awareness of such scholarship by western scholars, in turn promoting discussion and interaction.<sup>51</sup>

For inter-personal interaction the internet also provides a viable solution to the difficulty of international travel. Advanced internet video conferencing may involve major investment in custom-made suites but can also be achieved on a more modest scale with a high-speed internet connection (now widely available at university facilities in India), and a camera and microphone. A combination of providing papers in advance for discussion via webcam, using live webchat to enable academics to network and respond to questions during a conference, and using inexpensive video-recording technology to produce videos and podcasts of papers or close analysis of artefacts all represent ways in which communication technology could be used to facilitate inexpensive and integrated discussion between researchers in the western world and outside it.

---

<sup>50</sup> Vincent and Wickham (2013); Darley, Reynolds and Wickham (2014).

<sup>51</sup> One such example operating from New Delhi is DK Agencies.

## **1.6 Conclusion**

The aim of this introductory chapter has been to provide a definitional and historical framework within which exchange between the Mediterranean and the Indian Ocean in the fourth to seventh centuries will subsequently be addressed, and to outline the main conclusions of this thesis. The historical narrative of Indo-Roman trade is intentionally spare since many of the conclusions drawn from Indo-Byzantine evidence suggest revisions or questions which are equally applicable to Indo-Roman trade of the first three centuries A.D. The outline of the political history of the Roman Empire up to the seventh century is intended to provide a general context since the majority of the evidence handled is from the Mediterranean and the overall narrative is structured around Mediterranean debates concerning periodization. Historical backgrounds to other regions discussed are included in the relevant chapters.

## CHAPTER TWO: INDO-ROMAN SCHOLARSHIP AND THE BACKGROUND TO INDO-BYZANTINE STUDIES

### 2.1 Introduction

The number of studies addressing Indo-Roman trade, Roman trade with the east, Roman India and associated topics is enormous considering the paucity of source material and the persistent testimony of that evidence that Rome's trade with India by any reasonable reading (and not all readings are) was extremely peripheral to the regular workings of the imperial system. In comparison to Rome's trade or contact with the distant lands to its north or northwest (Germania, Scandinavia, the Russian steppe) and south (sub-Saharan west Africa) Roman relations with the distant east, mainly represented by India and China, have been studied extensively and for some time.<sup>52</sup>

There are reasons for this which need not be sought in an intellectual fixation on the exotic. Sources pertaining to Rome's relations with the east are more extensive than those dealing with the north or south. The fact that both India and China, and many of the spaces in between, had indigenous systems of literacy and complex, hierarchical societies in comparison to those of Germania or west Africa provides at least the impression of a clearer picture to the historian.<sup>53</sup> The goods which Rome derived from the east also seem to have played a more significant role in the culture and economy of classical Rome.

---

<sup>52</sup> With the north and west: Christlein and Natter (1978) 96-8, Dittrich (1987) 22, Mann (1974) 35, Mitrea and Preda (1964) 216-17, Pitts (1989) 55, with west Africa: Connah (2004) 107-8.

<sup>53</sup> Li and Prager Branner (2011) on literacy in early China. Hirth (1885) on the early availability of texts dealing with contact between China and Rome to western scholarship. The nineteenth-century growth in representation of India as a complex and sophisticated ancient civilization is dealt with later in this chapter.

While making no comment about absolute value or even relative value within the Roman economy, the written sources surviving from Rome indicate that eastern goods, especially silk, aromatics and spices, but also ivory, cotton and exotic animals occupied the attention of Roman consumers.<sup>54</sup>

As Parker has demonstrated, however, the prevalence of India in Roman texts is also indicative of a fascination with the east common to both Roman and modern writers. Parker is careful to insist in his introduction to *The Making of Roman India* that Said's theory of Orientalism must be contextualised appropriately to the Roman period rather than being applied anachronistically:

However, I do not imagine that Said's model of orientalism applies without further ado to this very different period of history – one that is separated from modern colonialism by the Industrial Revolution, and is thereby part of very different technological systems, and a different economy of knowledge.<sup>55</sup>

Nevertheless, as Parker's study demonstrates, Rome did have a conception of the east generally, and of India in particular, which exhibited much of the preoccupation with exotica, spiritual knowledge and extreme practices, and the presence of wealth and wonders, which characterises more recent orientalist perspectives. In other words, while one should be wary about reading modern orientalism into Roman attitudes to the east, it

---

<sup>54</sup> On the under-representation of inland African trade connections in the historical record: Phillips (1997) 455. Raschke (1978) 624 comments on the construction of statistical or quantitative analysis based on texts such as Pliny '[a]ll of these fake figures need to be dismissed. They suggest an exactitude and precision not warranted by the evidence'. All absolute calculations of value are avoided for precisely this reason.

<sup>55</sup> Parker (2011) 8.

seems clear that modern orientalism traces its lineage back in no small part to ancient ideas of the wonders and strangeness of India.<sup>56</sup>

This is relevant to Indo-Roman studies for two reasons. First, it has implications for an understanding of the Roman sources dealing with India, much of which Parker unpicks in *The Making of Roman India*.<sup>57</sup> Second, it situates modern historical studies of Roman contact with India within a historiographical trend towards the exoticising of the east, which is reinforced by the ancient sources used to generate modern narratives. Such a link between ancient and modern perspectives complicates the identification of the modern orientalist biases, which Said provocatively argued for in 1978.<sup>58</sup> The concern of this chapter is not to deal with the first issue, of Roman orientalising of India. Rather the aim of this chapter is to explore the connection (and disconnection) between Indo-Roman and Indo-Byzantine studies and demonstrate the ways in which a temporary refocusing of attention onto the later sources can address some of the methodological and interpretative themes which define Indo-Roman studies and which have often served to complicate as well as facilitate a scholarly understanding of pre-Islamic trade between the Mediterranean and India.

The connection between Indo-Roman and Indo-Byzantine is neither simple nor direct. For the purposes of this thesis and for reasons outlined below, Indo-Roman studies are here defined as the study of Roman contact and trade with India in the first three centuries A.D., thereby differentiating it from Indo-Byzantine studies (covering the fourth

---

<sup>56</sup> Said (1978) 58-9. Yoshiko Reed (2009) 55-70 discusses the complex links between modern and ancient orientalisms and the use of 'the east' as a locus not just for exotic otherness but also as a counter to political realities for Roman and Late Antique commentators.

<sup>57</sup> Parker (2011).

<sup>58</sup> Said (1978).

to seventh centuries). While the distinction is chronological, however, the scholarly conclusions of Indo-Roman studies cannot function as a prequel to and foundation for this thesis. That does not mean that the connection between the two arenas of study can be ignored. Roman contact with south India is better documented than late Roman and Byzantine contact, and so its sources must be incorporated. The common threads running through the historiography of Indo-Roman trade must also be unpicked in order to interrogate the conclusions drawn from the surviving sources and establish their usefulness either for a history of Indo-Byzantine trade, or for the continued study of Indo-Roman trade.

This chapter will, therefore, begin by defining the boundary between Indo-Roman and Indo-Byzantine for the purposes of this thesis. The ultimate suggestion of this thesis, based on a survey of the collected evidence, is that the current move towards re-integrating the evidence for the early and late centuries of Mediterranean Roman contact with India is a positive one and the distinction between Indo-Roman and Indo-Byzantine should be abandoned. However, at present it is a *de facto* distinction within scholarship which must be addressed in order to balance the use of evidence. It also provides a valuable perspective from which to review Indo-Roman studies and revise some of the conclusions which have stood without contest for several decades. This is not to suggest that no changes occurred over the roughly seven centuries of contact between the Roman Empire and India discussed here, but these changes, summarised in chapter eight, represent the evolution of a system, not two different phenomena.



Following an examination of the distinction between Indo-Roman and Indo-Byzantine studies this chapter will offer a brief historical survey of Indo-Roman studies highlighting the seminal studies and personalities central to the field. Analysis will then turn to the major methodological and interpretative strands which have shaped Indo-Roman studies. A methodological analysis of Indo-Roman studies demonstrates the importance of multi-disciplinary approaches since the inception of the field of study, and the consistent construction of positive, maximalist narratives from often ambiguous sources. Both of these approaches have strengths and weaknesses with implications for future scholarship. Indo-Roman studies have similarly been shaped by two impulses with clear benefits and drawbacks for understanding pre-Islamic interaction between the Mediterranean and the Indian Ocean: Indo-Roman studies have, more than many historical fields, been heavily influenced by contemporary political developments. The impact of colonialism and post-colonial theory is particularly striking. They have also become increasingly separate from surrounding or related disciplines, evolving an ecosystem of Indo-Roman studies which has little connection to the worlds of Roman, Indian or other associated historical fields. Disciplinary Apartheid is not unique to Indo-Roman studies but its consequences for the discipline require analysis.<sup>59</sup> Examining the strengths and weaknesses of these methodological and interpretative approaches provides clear themes which subsequent chapters address through re-examination of well-known evidence and the incorporation of entirely new data for Indo-Byzantine exchange.

---

<sup>59</sup> Henkel and Vabø (2006) 137.

## 2.2 Historical background

Roman coins found in India are referred to from the seventeenth century onwards, though rarely in detail.<sup>60</sup> However, despite occasional mentions of earlier finds, it was not until 1787 that Roman coins found in the subcontinent were recorded in any detail. In 1787 the former Governor of Madras wrote that:

A peasant near Nelor, about 100 miles north-west of Madras, was ploughing on the side of a stony craggy hill; his plough was obstructed by some brickwork; he dug and discovered the remains of a small Hindu temple, under which a little pot was found with Roman coins and medals of the second century. He sold them as old gold, and many no doubt were melted, but the Nawab Amir ul Umara recovered upwards of thirty of them. This happened while I was governor, and I had the choice of two out of the whole. I chose an Adrian and a Faustina. Some of the Trajans were in good preservation. Many of the coins could not have been in circulation; they were all of the purest gold, and many of them as fresh and beautiful as if they had come from the mint but yesterday; some were much defaced and perforated, and had probably been worn as ornaments on the arm, and others pending from the neck.<sup>61</sup>

The support which these coin finds gave to the testimony of well-known Roman texts generated interest among, in particular, the part-time scholars and colonial administrators working for the British government in India, and coin finds thereafter were reported with some regularity.<sup>62</sup> The nineteenth century also saw the first accessible, published and edited editions of the more minor classical texts which still frame Indo-Roman studies and the wider field of ancient western contact with India.<sup>63</sup> In particular, in

---

<sup>60</sup> Suresh (2011) 22.

<sup>61</sup> Thurston (1888) 7 (quoting Davis (1790) 332).

<sup>62</sup> In chronological order: Davis (1790), Prinsep (1832), Wilson (1832), Prinsep (1834a, 1834b), Roer (1843), Elliot (1844), Freeling (1857), Bidie (1874), Beglar (1882) 72-3, Little (1883).

<sup>63</sup> Thurston (1888) 26 §34, Keeper of coins at the Madras Government Museum, was able to summarise the main texts mentioning India thus: Diodorus Siculus, Strabo, Pliny, *Periplus Maris Erythraei*, Ptolemy, Arrian, Pausanias, Bardesanes, Aelian. The *Christian Topography* was not to become widely accessible to scholars of Indian Ocean commerce until McCrindle's 1897 translation of Book Eleven.

1807 William Vincent published a translation of the voyage of Nearchos, the naval general of Alexander the Great who sailed down the Indus then up the Red Sea to Alexandria. This earliest western account of a journey to India was followed in a second volume of the same year by a translation of the anonymous first century A.D. *Periplus of the Erythreian Sea*, bringing the Roman connection with India under the eye of scholarship.

The publication of coin finds continued with the introduction of the 1878 Treasure Trove Act in Britain and its territories. Thurston's publication of the *Catalogue of Roman, Indo-Portuguese and Ceylonese Coins* in the collection of the Madras Government Museum represented the first effort to make available detailed information about a single collection of Roman coins in India.<sup>64</sup> The Madras Government Museum still has the largest documented public collection of Roman coins and antiquities on the subcontinent and Thurston provided not only a catalogue of the coins but also some historical context. This was the first effort to set the coin finds and the known Roman texts explicitly into a connected narrative.<sup>65</sup>

The period from the publication of Thurston's catalogue to 1914 saw a steady flow of minor studies.<sup>66</sup> The early twentieth century witnessed the beginning of attempts to

---

<sup>64</sup> In 1894 Thurston re-issued his catalogue, this time removing references to coins which he suspected had not been found in India, but had travelled east later as philanthropic bequests or the possessions of modern collectors (Thurston (1894) 7.). He also included more detailed descriptions of Roman coins in private collections within the Madras Presidency (Thurston (1894) 29).

<sup>65</sup> Thurston (1888) 23-9.

<sup>66</sup> Sewell (1904) produced an up-to-date list of Roman coins but did not add substantially to Thurston's conclusions about their historical context. Examples of other studies which added to the context of Indo-Roman trade without specifically referring to it include the first English translation of the *Christian Topography* by McCrindle (1897). An attempt was made to reconstruct the history of the Tamils in around the first century A.D. on the basis primarily of *Cankam* literature by Kanakasabai (1904). The first European-language (German) translations of the Sinhala chronicles of ancient Sri Lanka (Geiger (1905) and in 1912 the *Mahavamsa* was translated by Geiger from his German edition into English). Gerini (1909) on Ptolemy's *Geography*. A new scholarly edition of the *Periplus of the Erythreian Sea* (Schoff, 1912).

synthesise the existing data into a lengthier narrative than Thurston's introductory remarks and thereby arguably inaugurated Indo-Roman studies as a subject area.<sup>67</sup> Charlesworth's 1926 study of the network of commerce and communication which underpinned the Roman Empire was the most significant of these for its lasting impact on scholarship, which will be addressed below. It also represented the most detailed study of Indo-Roman trade until the next major phase in scholarship: the arrival of Mortimer Wheeler in India.

The significance of Mortimer Wheeler in India for the development of sub-continental archaeology cannot be overstated. His scholarship of 'Indo-Roman port sites' is a vital part of the history of Indo-Roman studies. The excavation of the site of Arikamedu from 1944 and the narrative presented of it has shaped almost all subsequent interpretation. As an archaeologist, Wheeler for the first time used material evidence (including coins)<sup>68</sup> to create a framework for understanding Indo-Roman contact (discussed in more detail later in this chapter and in chapter seven) which has been applied subsequently to archaeological contexts throughout south India and beyond. Wheeler, as the pre-Independence director of the Archaeological Survey of India tasked with creating a system of archaeological research which could be maintained by whatever independent governance of the subcontinent transpired, was also responsible for training the first generation of post-Independence Indian and Pakistani archaeologists, with implications for the nature and interests of Indian archaeology up to the present.<sup>69</sup>

---

<sup>67</sup> Rawlinson (1916); Warmington (1928).

<sup>68</sup> Wheeler, Ghosh and Deva (1946) 116-121 included a newly updated list of Roman coin finds in India, which remained the major reference work until Turner's catalogue was published in 1989.

<sup>69</sup> Chakrabarti (1982) 337-8.

1978 witnessed perhaps the most important theoretical attempt to reconceptualise Indo-Roman studies since Wheeler and, while it has become a landmark study for its detailed and extensive bibliography, Raschke's examination of Rome's contact with the east (which was geographically and chronologically wide-ranging, dealing with among other things the early history of nomadic contact with China) has received markedly less attention as an attempt to reset the field methodologically.<sup>70</sup> Raschke's argument, taking Weberian principles of state formation and action as its core, stated strongly that state involvement or direction of trade could not seriously be posited. This remains one of the key conclusions of this thesis and the reasons for its non-adoption in subsequent scholarly studies of Roman trade with India are explored further below.

In 1989 Paula Turner provided the most recent work to catalogue and present the Roman coin finds in India. Her catalogue provides detailed descriptions of coins, with images, and accounts of museum records. Since then there has been a steady flow of publications on the subject of Indo-Roman trade and the development of an increasingly broad-ranging subject area, which aside from the scholarly publications discussed in this chapter, has a growing body of international conferences or conference panels framed around the common concern of understanding the nature of Roman contact with India.<sup>71</sup> Of recent publications, three are of particular significance.

---

<sup>70</sup> Raschke (1978) 605-6.

<sup>71</sup> Recent conferences or scholarly gatherings either exclusively dealing with Indo-Roman trade or with panels dedicated to the subject include: European Association for South Asian Archaeology and Art (EASAA) conference 2005 (4<sup>th</sup>-8<sup>th</sup> July, London), 2007 (2<sup>nd</sup>-6<sup>th</sup> July, Ravenna), 2010 (4<sup>th</sup>-7<sup>th</sup> July, Vienna) and 2012 (2<sup>nd</sup>-6<sup>th</sup> July, Paris), the 'Maritime world of ancient Rome' conference (27<sup>th</sup>-29<sup>th</sup> March 2003, American Academy in Rome), conference of Les sociétés méditerranéennes et l'océan Indien (23<sup>rd</sup>-27<sup>th</sup> February 2011, Kolkata). Indo-Roman studies also now has a Facebook page for sharing information among an interested community: <https://www.facebook.com/pages/Indo-Roman-trade-and-relations/105078116216342> accessed 18/6/2013 (accessed 18/6/2013).

Young's 2001 *Rome's eastern trade: international commerce and imperial policy 31 BC – AD 305* is a largely textual study though he makes extensive use of the expanded archaeology of the west coast of the Red Sea (in this respect foreshadowing Tomber's 2009 publication), but mainly provides a conservative narrative which closely resembles those of Charlesworth and Wheeler. Tomber's *Indo-Roman trade: from pots to pepper*, published in 2009, is perhaps the most important recent work on the subject both for its effort at synthesis and its use of extensive ceramic evidence. The new evidence it deploys is derived largely from the Roman end of trade though evidence from Aksum and India is used to generate a holistic impression of the commercial networks involved. It is also important in including the fourth century and onwards fully in its narrative, and thereby taking a significant step in returning what are here termed 'Indo-Byzantine studies' to the larger narrative of Indo-Roman studies. Finally, Parker's *The making of Roman India* (2011) is another important study for its new approach to the question of Indo-Roman contact. Largely eschewing the question of trade and the networks of commerce which underpinned Roman contact with India, Parker focuses on the reception of India within Roman literary culture.<sup>72</sup> His detailed exploration not only of narrative accounts of India but also passing references to India and Indian products provides a nuanced analysis of the role of India in the Roman world. Even within a highly textual study, however, Parker has proven willing to accept at face value some of the assumptions made about core pieces of evidence for Indo-Roman trade which might have warranted closer scrutiny, as is demonstrated further in chapter three.

---

<sup>72</sup> Parker (2011) 8.

Finally, of crucial and recent importance has been the extensive work on Late Antique archaeological sites along the Red Sea coast. These sites are explored in detail in chapter six, but their importance for a survey of Indo-Roman studies warrants a brief summary here. The excavation of various sites along the Red Sea coast, most importantly those of Berenike, Myos Hormos and Aila have continued the tradition of multi-disciplinary approaches to Indo-Roman trade, introducing new approaches such as archaeobotany alongside survey and excavation.<sup>73</sup> These excavations have, however, also challenged the traditional chronological framework of Indo-Roman studies by revealing the significance of late antique developments at sites focussed entirely on maritime trade, including with the east. The exploration of these sites thus provides a crucial archaeological context for the coins which are the focus of this thesis and offers a powerful material cultural link between what have tended to be the historically separate worlds of Indo-Roman and (insofar as it has been pursued) Indo-Byzantine scholarship.

### **2.3 Separating Indo-Roman and Indo-Byzantine**

The division between Indo-Roman and Indo-Byzantine is, based on the evidence presented in this study, largely artificial. The evidence used for the reconstruction of fourth- to seventh-century contact between the Mediterranean and India is often difficult to distinguish from that applicable to the first three centuries A.D. In the case of archaeological evidence it is often not possible to date excavation levels or finds so narrowly, especially in Indian contexts. For other sources, such as the coinage, there is

---

<sup>73</sup> Aila: Dolinka (2003), Parker (2009), Ward (2007). Berenike: Bagnall, Helms and Verhoogt (2000, 2005), Sidebotham (2011), Sidebotham and Sidebotham (2002), Sidebotham and Wendrich (1995, 1996a, 1996b, 1998, 1999a, 1999b, 2000, 2001-2002, 2002), Wendrich, Tomber, Sidebotham *et al.* (2003). Myos Hormos: Blue (2002a), Peacock (1993), Peacock and Blue (eds) (2006), Peacock and Blue (eds) (2003).

clear continuity in the use and distribution of finds, and written sources are so scarce that the most important, such as the first-century *Periplus of the Erythreian Sea*, cannot be disregarded even for the later period.<sup>74</sup> Nevertheless, a distinction is necessitated by the common tendency in prevailing scholarship to draw a somewhat arbitrary line between the third and fourth centuries. Although some of the earliest and the most recent studies of Indo-Roman trade have included the later centuries, no single project has yet focused on the later three centuries in preference to the earlier and this is important for two reasons. First, there is some evidence in the form most notably of the coin finds examined in chapter five, which has received little or no attention because it falls outside the focus of most publications. Second, the studies which have defied conventional chronological framing and moved into a study of the fourth to seventh centuries have nevertheless tended to give them a more cursory view or interpret them through the normative lens of evidence available for the first three centuries A.D.<sup>75</sup>

The earliest studies to address Roman trade with India did not draw the distinction here labeled Indo-Roman/Indo-Byzantine. Throughout the nineteenth century most studies focused on coin evidence, which is predominantly of the earlier period.<sup>76</sup> However, it is notable that Thurston's catalogue of Roman coins in the Madras Government Museum does not distinguish between Roman and late Roman or Byzantine specimens.<sup>77</sup> Only with the advent, outlined above, of systematic, synthetic studies in the first three decades of the twentieth century did 'Indo-Roman' begin to mean the first three centuries A.D. Here the

---

<sup>74</sup> Casson (1989).

<sup>75</sup> Power (2013) 6-8 highlights the dominance of first- to third-century evidence and theoretical frameworks in viewing Late Antique evidence within the Red Sea. Young (2001) 78-9 provides a cursory statement about the late Roman trade with India which reflects a general reluctance to engage with these later centuries.

<sup>76</sup> Turner (1989) 16.

<sup>77</sup> Thurston (1894) 7-9.



integration of Indo-Roman trade into larger narratives of Roman history cannot be underestimated. In particular, the assertion inaugurated by Gibbon and perpetuated thereafter that from the reign of Constantine I and the increasing Christianisation of the empire, the economic drive of ancient Rome dwindled has had a significant impact not always fully elucidated by scholars who maintain it.<sup>78</sup>

Charlesworth's 1926 study was the clearest statement of chronological limits which have predominated thereafter. Charlesworth's verdict on the later Roman Empire was neatly summarized thus: 'when we reach the age of Constantine everything has hardened down into a monotonous routine and a dull hopelessness, and private enterprise has been almost stifled'.<sup>79</sup> From that point only a very few studies have ventured beyond these pre-set limits, and in the field of numismatics the barrier has proven most impermeable. Turner's 1980 publication of *Roman coins from India*, for example, draws a line at the reign of Constantine I without explanation.

The most recent studies of Indo-Roman contact are beginning to cross this invisible boundary, though more commonly in material-culture based studies than in those with a literary emphasis. Tomber's 2009 study is an exception in that it fully incorporates the fourth to sixth centuries since it is based to a large extent on the archaeology of the Red Sea ports, which show a definite continuity crossing the third-century demarcation.<sup>80</sup> The need for a separate study of Indo-Byzantine trade is therefore a function primarily of historiography rather than historical evidence. Much of the following examination of

---

<sup>78</sup> Gibbon (1776) 220.

<sup>79</sup> Charlesworth (1926) xiv

<sup>80</sup> Tomber (2009b) 76-8, 99-103, 161, 166-8, 171.

evidence for fourth- to seventh-century trade connections exhibits a similarly close and complex relationship between evidence and interpretation.

## **2.4 Methodological discussion**

The practical undertaking of Indo-Roman studies has since the eighteenth century increasingly demonstrated two key features. Its character has been consistently multi-disciplinary and it has also exhibited a tendency towards interpreting evidence in a positivist and maximalist fashion. These methodological tendencies have strengths and weaknesses for the field which affect almost all scholarly conclusions. To examine first the historical interdisciplinarity of the subject it is necessary to return to the early days of Indo-Roman studies and the personalities of its first scholars.

The Indian subcontinent was an exciting locus for academic thought during the nineteenth century with direct implications for the growth of Indo-Roman studies. Alongside the emergence of textual scholarship, and in many cases with the keen involvement of the same people, numismatics and archaeology were also evolving rapidly. Records of single finds, hoards and private collections, as summarized by Elliot and Thurston in 1844 and 1888 respectively, testify to the widely dispersed vitality of numismatic interest in nineteenth-century India. At the forefront of both numismatic and archaeological developments, however, stood some of the most eminent scholars in Indian history, including Alexander Cunningham, first director of the Archaeological Survey of India, Walter Elliot, whose initial work on the coin series of India included bringing together the textual references and the coins testifying to Roman trade with India, and Sir

James Prinsep, whose pioneering work included deciphering the Brahmi script used in early Indian inscriptions from the reign of Ashoka (fourth century B.C.).<sup>81</sup>

Not all of the conclusions reached by these scholars have been borne out by subsequent developments. Elliot, for example, argued on the basis of the mixture of Chinese, Roman and Arabian coin finds discovered on the Coromandel Coast that ‘an extensive commerce [existed] between China and the Red Sea, of which the Coromandel coast seems to have been the emporium’.<sup>82</sup> It has now been shown that the Chinese coins which are discovered on the Coromandel Coast date from the tenth century and later, and so do not testify to a contemporaneous connection between China and the Red Sea via India in the Roman period.<sup>83</sup> Nevertheless, the extensive work done to identify Roman coins found in India during the first century of British rule has provided an invaluable source of data on coins now lost: as the piecemeal and fragmentary early records of coin finds in India, including accounts of casual loss and disappearance, almost always indicate, the nineteenth century saw a massive increase in interest in Indo-Roman coin finds but the systems were not yet in place to ensure their preservation.<sup>84</sup>

---

<sup>81</sup> Cunningham made major contributions to the study of ancient India with publications such as *The ancient geography of India* (1871), *The book of Indian eras* (1883) and *Coins of ancient India* (1891). Elliot’s major contributions included ‘Hindu inscriptions’ (1837), ‘Numismatic gleanings, being descriptions and figures of the ancient coinage of southern India’ (1858) and *Coins of southern India* (1886). Apart from succeeding in deciphering the ancient Brahmi script of India (1837a-d) Prinsep also contributed to ancient Indian numismatics with publications such as ‘Roman coins in upper India’ (1832) and ‘Specimens of Hindu coins descended from the Parthian type, and of the ancient coins of Ceylon’ (1837).

<sup>82</sup> Elliot (1886) 35.

<sup>83</sup> Cribb (1996).

<sup>84</sup> In addition to the fate of the 1787 hoard, already mentioned, Elliot (1844) 215 commented that of a hoard of *aurei* discovered at Darphal in 1840 ‘only eighteen were secured’. Thurston (1888) 12 cited an 1852 notification by Drury of the discovery of a hoard of Roman coins in Cannanore, in which Drury stated that ‘[t]he purity of the gold especially attracted the notice of the jewellers and the wealthier natives, who purchased them for the purpose of having them melted down for trinkets and ornaments’. Hill (1898) 304 commented of the Pudukotai hoard that it was ‘[t]o the energy of Mr. Crossley, his Highness’s private secretary, [that] we owe it that the hoard was secured very nearly if not altogether intact, although the native who discovered it made strenuous attempts to defeat the ends of numismatics and the law’.

The tendency to see Indo-Roman trade from the perspective of a default multi-disciplinary standpoint, as a pre-set question to which multiple evidence types might be applicable, is also visible in the early synthetic studies. Charlesworth's work is the most striking for its sophisticated use of written and material evidence and commitment to using a range of sources, including Tamil and Chinese textual sources.<sup>85</sup> Though these texts had been available since the nineteenth century this represented their first incorporation into a holistic and relatively mainstream study of Roman history, and by extension, their first application to Indo-Roman trade.<sup>86</sup> Indeed, Charlesworth was the first and, for a long time, the principal scholar to bring together all of the major numismatic and textual evidence and present it in the form of a digestible, coherent narrative. Such was his success that, until Tomber's 2009 publication, Charlesworth constituted the most accessible and systematic introduction to the study of Indo-Roman trade for a reader approaching the field for the first time.

Charlesworth's model for multi-disciplinary approaches to Indo-Roman studies was, in fact, of significant breadth and creativity and pre-empted later trends towards the utilisation not only of archaeological but also anthropological data: with reference to Damascene trade, for example, he commented that '[i]t would be interesting to speculate whether the famous Arab industry of the tempering of steel had its counterpart in Roman

---

<sup>85</sup> On the distribution of coin finds and their relationship to beryl deposits known to Charlesworth's contemporaries and reference to *Yavanas*, believed by Charlesworth to be Romans (for the debate over this, see below) Charlesworth (1926) 69. The positive impression of Roman financial management displayed in Chinese sources is discussed on 72.

<sup>86</sup> In addition to the publication of the *Periplus of the Erythreian Sea* in 1855 (Müller), the Chinese texts (Hirth (1885)) thought to have a bearing on Roman contact with the east had also been published in translation, as had the majority of the Sinhala chronicles of Sri Lanka in the first decade of the twentieth century (Geiger 1905, 1912 – the *Culavamsa* followed in English in 1925). The Tamil *Cankam* epics, discussed in more detail in chapter seven, were also rediscovered and published for the first time. The early publications of these texts represent a complex tradition of scholarly production, which is examined in detail by Zvelebil (1992) 144-222, 262-9.

days, for Indian steel was certainly shipped to these regions, but we have not sufficient evidence upon which to base a conclusion'.<sup>87</sup> Such clarity about the reliability and basis for his conclusions is a feature of Charlesworth's writing to be commended.

Wheeler as the next major figure in Indo-Roman studies continued the trend towards multi-disciplinary evidence use. In addition to being an archaeologist of Roman Britain, well-versed in the classical texts, he encouraged the creation of an up-to-date list of Roman coin finds in India as an appendix to his publication of the site of Arikamedu.<sup>88</sup> His analysis of Indo-Roman trade also emphatically used written, archaeological, numismatic and linguistic evidence to support his conclusions.<sup>89</sup> As this chapter explores, the theoretical underpinning of such multi-disciplinary work was not always effective. Evidence could often be strung together into pre-formed narratives without due consideration of the unique limitations and capacities of different evidence types, but the principle that Indo-Roman trade should be studied using a variety of datasets was by the 1940s firmly entrenched.

The involvement of specialists in numismatics and ceramic analysis at the heart of the discipline alongside textual historians has subsequently continued the multi-disciplinary trend. Nevertheless, Indo-Roman studies have not been untouched by the increasing distance between disciplinary boundaries in the humanities and the growing technicality of certain subjects, nor have the linguistic demands on scholarship lessened. While the early multi-disciplinary approaches to Indo-Roman studies were usually the work of individual polymaths who, in many cases, combined brilliance with the advantage

---

<sup>87</sup> Charlesworth (1926) 48.

<sup>88</sup> Wheeler, Ghosh and Deva (1946) 116-21.

<sup>89</sup> For example: Wheeler (1954b) 135, 140-2, 146-51.

of being at the cutting edge of their various areas of study by virtue of being the first to study the material, the advance of knowledge means that this can no longer be the case. Specialists from a variety of fields must now rely on the expertise of others in processing data which any individual lacks either the time or the qualifications to assess personally. Here the other methodological feature of Indo-Roman studies forms a particularly dangerous trap for research.

A tendency to create maximalist and linear narratives from very ambiguous evidence is a long-standing feature of Indo-Roman studies. From the earliest publications there was some criticism of this approach however. In 1898, for example, Hill published the discovery of a hoard of Roman *aurei* from Pudukottai. As part of his assessment of the hoard and its significance, he commented that

I will not add to the various speculations already quoted by Mr. Thurston as to the Roman trade with India. It is hardly necessary to say that the presence of Roman coins does not necessarily imply that of Roman traders.<sup>90</sup>

Nevertheless, the conflation of Roman coins with Roman people continues to recur in scholarship and is indicative of a more general desire to utilise the most compelling rather than the most probable interpretation of data in generating narratives.<sup>91</sup> Here the temptation of multi-disciplinary studies is particularly strong since they provide the capacity to reference conclusions built on insecure evidence but which, used alongside other maximalist interpretations can create a narrative which either seems more secure

---

<sup>90</sup> Hill (1898) 318.

<sup>91</sup> Kandaswamy (1984) 41.

than it is, or which appears securely to support a pre-conceived narrative which on closer inspection is more difficult to uphold.

Charlesworth's study is a notable example of the way in which coins, archaeology and a variety of textual sources could be strung together in support of pre-determined conclusions. For Charlesworth, Hill's warning of a generation earlier notwithstanding, the presence of Romans in India was a given, in support of which the image of a Temple of Augustus in the Peutinger Map (a depiction of the world, apparently as known to the Romans) is referenced with the comment that it was 'a fact inherently probable wherever any large number of citizens of the Empire were gathered together'.<sup>92</sup> Using this particular piece of evidence is especially problematic since the date, purpose, reliability and origin of the large parchment depiction of the Roman Empire with routes marked on it, usually termed the Peutinger Map or the *Tabula Peutingeriana*, are all subject to intense and on-going debate. Within Indo-Roman studies its listing of a temple of Augustus at the Indian port of Muziris receives frequent reference in support of the importance of trade routes between the Mediterranean and the Indian Ocean, often without alluding to the complexity of the document.<sup>93</sup>

The first full publication of the artefact was by Miller and it remained the best source until Weber's edition, now superseded by the electronic publication of the map by Talbert.<sup>94</sup> This was accompanied by a printed study of the map by Talbert in which he dates the content of the map to the Diocletianic era (c. A.D. 284-305) and argues that it

---

<sup>92</sup> Charlesworth (1926) 70.

<sup>93</sup> For example: Casson (1989) 24; Charlesworth (1926) 62 uses the source cautiously but declares the presence of the temple to be 'not improbable'; McLaughlin (2010) 49; Sedlar (1980) 93.

<sup>94</sup> Miller (1916); Weber (1976); Talbert (2010b).

was intended as an ideological statement about the nature and extent of the *Pax Romana*.<sup>95</sup> This joins a range of other theories about its origin and purpose including that it is a parchment copy of a map originally painted on papyrus and made long and narrow in order to fit into a map case so that it could be carried by its putative first- to second-century original user, who may have worked for the *cursus publicus* or have derived his information from it.<sup>96</sup> Albu, by contrast, argues that the manuscript was created during the ninth century as part of a statement about the nature of Carolingian imperialism.<sup>97</sup> Delano-Smith contends that it is a copy of a mid-fourth-century prototype which was at that time created as a private, decorative, historical wall map.<sup>98</sup> Graf is not uncommon in flagging some of the complexities of the document but then, with respect to his own subject matter (the *Via nova Traiana*), choosing to accept its accuracy, a date in the early Roman imperial period and a basis in Roman state documents.<sup>99</sup> Bekker-Nielsen, one of the key figures in the debate over hodological versus cartographic conceptions of space in the ancient world, sees the artefact as ‘not a true map at all, but an itinerary in pictorial form’.<sup>100</sup> Salway argues that the surviving map is indeed a copy of a late antique original, constructed using sources which would have been commonly available and which dated in part from the earlier Roman period, but which were innovatively displayed in the form now extant, probably for decorative purposes and without any sign of state sponsorship.<sup>101</sup> An environment of such diverse scholarly opinion and conjecture underlines how little can be

---

<sup>95</sup> Talbert (2010a). The *Pax Romana* (= Roman Peace) refers to the condition of internal peace, and minimal outward military expansion in the Roman Empire from c. 27 B.C. to A.D. 180. (Gibbon (1776) Chapter 3).

<sup>96</sup> Dilke (1987b) 238-9. The *cursus publicus* refers to the imperial postal network, used to facilitate political and military communication. Specific written permissions, or possession of certain ranks would entitle a traveller using this network to rest and change horses at designated way stations along important routes in the empire (Dilke (1987b) 239).

<sup>97</sup> Albu (2005, 2008).

<sup>98</sup> Delano-Smith (2006) 58.

<sup>99</sup> Graf (1997) 3.

<sup>100</sup> Bekker-Nielsen (1988) 156-7.

<sup>101</sup> Salway (2005).



known about the artefact with any certainty, in light of which this study makes little use of it. It contains an image of a place on the west coast of India, labelled Muziris, and endowed with a temple of Augustus, for whatever this may be worth.

In addition to a willingness to use data which cannot be dated or understood with any clarity, Charlesworth also deployed the temporal and geographic distribution of coins in order to reconstruct the chronology of trade, in clear relation to then-perceived orthodoxies regarding the textual history of the Roman Empire. The supposedly fatal weakness of the Empire from the reign of Marcus Aurelius onwards, for example, is reinforced by numismatic analysis thus:

From coins found we can discern some of the fluctuations through which this trade passed; the greatest number of them belong to the period between Augustus and Nero and these have been discovered principally round Coimbatore and Madura. After Nero's reign fewer occur, and those that do seem to be shifting North towards the modern Surat and the cotton-growing districts, as we might expect in accordance with Vespasian's policy of retrenchment. Finally there comes a distinct falling off about the period of Marcus Aurelius and after, which faithfully reflects, we may be sure, the decline in trade resulting from the weakness and internal wars of the Empire.<sup>102</sup>

In neither case, given the state of knowledge when Charlesworth was writing, were these conclusions fundamentally unsound. There was no archaeological data to support or contradict the existence of a Temple of Augustus in India and he does not misrepresent the chronological distribution of then-extant coin finds. In both cases, however, the readings given to the evidence by Charlesworth represent a lack of caution in approaching complex evidence and a willingness to opt for the interpretation which best fitted his existing ideas

---

<sup>102</sup> Charlesworth (1926) 70.

of the operation of Indo-Roman trade (especially concerning Roman dominance of the trade and the historical decline of the Roman Empire).

In the next generation of scholarship Wheeler continued a tendency towards an extremely maximalist view of archaeology, which he combined with a vision of the Roman world heavily influenced by a conviction in its strong institutional structures and extensive bureaucracy. It was a view of Rome (particularly at the edges of its imperial reach), which he had developed during most of his early career excavating in Britain, especially at Roman sites, before his appointment to India.<sup>103</sup> This view of the Roman world and its impact in Indo-Roman studies is examined in greater detail in the analysis of interpretative approaches to Indo-Roman studies below but here it is sufficient to note that, again, Wheeler's view was not unreasonable within his scholarly context. The vision of the Roman Empire as a heavily structured bureaucratic state has only recently come to be challenged under the investigation of more fundamental aspects of its organisational structure.<sup>104</sup> However, such a vision of the Roman Empire was imposed upon the surviving archaeology in India rather than deriving from it. As chapter seven demonstrates, the remains at Arikamedu provide no support either for a Roman presence on or Roman administration of the east coast of India.

These tendencies towards the extrapolation of deeply-rooted regulatory systems from archaeological remains, and towards a linear and optimistic approach to apparent coincidences in the historical record is demonstrated clearly by Wheeler's interpretation of the name of the town near which Arikamedu was discovered, and which he identified with

---

<sup>103</sup> Wheeler (1954a) describes Wheeler's career in archaeology, linking his experiences in Britain and India. Lucas (2012) 49-50 on the status of Wheeler in the history of British archaeology.

<sup>104</sup> Purcell (1986) 564-5.

a toponym in the *Periplus of the Erythreian Sea*, as is the tendency to fill in gaps in narrative with assumptions and ‘most likely’ scenarios. The orientalist notion of an unchanging, ahistorical India is also peripherally present:

This village, like its modern equivalents in the neighbourhood, doubtless consisted of simple fisher-folk who caught the gullible fish of the region from the shore or from small outriggers, gathered the fruits and juices of the palms, cultivated rice-patches, and lived in a leisurely and unenterprising fashion just above subsistence level. To it suddenly, from unthought-of lands 5,000 miles away, came strange wines, table-wares far beyond the local skill, lamps of a strange sort, glass, cut gems. Traders arrived across-country from the west coast to meet the large Indian east coast ships of which the *Periplus* tells us, laden with gemstones from Ceylon, pearls from Kolchoi (Colchi) or spices and silks from the Ganges. A small foreign quarter like that of Puhar came into being, and finally the village was replaced by a brick-built town, spreading northwards to the sea. There is no reasonable doubt that this *new town* was the *Podouke* of the *Periplus*, the *Podouke emporion* of Ptolemy, the Pudu-chcheri or 'New Town' of the Tamils, garbled by Europeans as Puddicherry and Pondicherry. Shifting sands have moved the town a mile or two, but the name has come down, little changed, through nineteen centuries.<sup>105</sup>

Wheeler also applied the assumption already noted in earlier numismatic discussion: evidence of Roman material can be interpreted as evidence of Romans. In discussing a lack of textual knowledge of Sri Lanka in the Roman world, for example, Wheeler commented that

It is a fair inference that the Roman agencies established in the east coast ports under Augustus and Tiberius were, so far as the Westerners were concerned, the termini of trans-peninsular routes, and that only towards the end of the 1st century were the western and eastern ports linked also by regular circumpeninsular traffic.<sup>106</sup>

It is unclear exactly what Wheeler means by ‘Roman agencies’, but the implication that such agencies were Romans, who brought with them Roman structures, and that this vision

---

<sup>105</sup> Wheeler (1954b) 147.

<sup>106</sup> Wheeler (1954b) 144-5.

of Indo-Roman trade existed prior to and in isolation from recovered evidence, is supported further by Wheeler's comment about the discoveries at Arikamedu that '[t]he administrative centre, temples and dwellings of the town have not yet been identified'.<sup>107</sup> It seems clear from this statement that Wheeler had certain expectations, apparently conditioned by his work on Roman Britain.

Turner's 1989 publication of Roman coins in India provides an intriguing methodological counterpoint within the broader field of Indo-Roman studies. The work is neither particularly multi-disciplinary nor does it construct much of a narrative framework for the evidence at all. It thus offers an insight into the difficulty of avoiding a multi-disciplinary approach in favour of one focussed entirely on one dataset. Turner provides a chronological survey of Indo-Roman trade on the basis of the coin finds.<sup>108</sup> She then focuses her attention on addressing some key, but in many respects disconnected, issues which had been raised in minor studies of Roman coins in India. These include slash marks on coins and the relationship between the coins in India and the evidence for Roman contact with Sri Lanka.<sup>109</sup> Responses to these often somewhat piecemeal queries about the material are usually offered without providing any coherent historical context.

A clear example of this phenomenon is the noticeable absence of India from a book entitled *Roman coins from India*. While discussing the Roman coin finds, and to a far more limited extent, their imitations, in terms of trade, Turner does not move much beyond the supposition, already put forward by Thurston in 1888, that the terms of trade meant that Romans had to make up the trade deficit in their eastern commerce by exchanging specie

---

<sup>107</sup> Wheeler (1954b) 148.

<sup>108</sup> Turner (1989) 16, 42-3.

<sup>109</sup> Turner (1989) 20 concerning Sri Lanka, 29-34 on slash marks.

for the luxury items they wanted.<sup>110</sup> No attention is paid to the economic systems of the subcontinent nor to distributional patterns not related to trade. The complete lack of any discussion of coin piercings further highlights the author's lack of interest in the Indian context for the coins. The analysis of the Roman economy is equally thin. As a numismatic monograph, Turner's work is highly detailed and thorough but the coins largely stand apart from their historical context. In this respect Turner's work highlights the need to address problems with the current multi-disciplinary approaches to Indo-Roman studies by developing a more robust methodological infrastructure rather than fragmenting the subject area into specialist and non-communicative fields.

The most recent studies of Indo-Roman trade have variously conformed to the pattern of multi-disciplinary scholarship and a tendency towards optimism in interpretation of data. Young's study is of particular interest since it demonstrates the effective inoculation which the field sometimes appears to have against cautionary voices. While generally a measured study of the evidence for state promotion of trade, Young's treatment of Pliny overstates both the quantitative reliability of his figure (100 million *sesterces*) for Roman losses in trade with India and the extent to which these can in turn be judged against estimates of other elements of the Roman economy.<sup>111</sup> Young concedes that using Pliny's figure to gauge the value to the Roman economy of the twenty-five per cent tax applied to Indian goods entering the Red Sea is risky, but proceeds to do so anyway on the basis that if Pliny is assumed to have used tax receipts then the figure is likely to be of the appropriate order of magnitude. It is curious that Young here makes no reference either to cite or refute Raschke's argument that there is no evidence that Pliny could have had

---

<sup>110</sup> Thurston (1888) 17.

<sup>111</sup> Young (2001) 210.

access to any records (nor even that such records existed) which could have made his figures anything other than rhetorical.<sup>112</sup> This is not a matter of scholarly oversight (Raschke is cited extensively by Young) nor even disagreement, since the subject is not addressed, but rather demonstrates the way in which complication or problematisation of evidence related to Indo-Roman trade may be acknowledged or allowed to stand uncontested, but will frequently then be disregarded in subsequent evaluations. The contention here is not that Pliny definitively did not have access to government records, but that without supporting evidence this cannot be assumed. Furthermore, even if records did exist and Pliny could be shown to have had access to them, the roundness of his figures and their rhetorical importance in his diatribe against what he perceived as the profligacy of the Roman elite should generate extreme caution about submitting his numbers to quantitative examination. The regular resurrection of the theory that Roman artefacts must denote the presence of Roman individuals is a further example of the same desire in the field to insulate against the weakening of any available source of evidence by critical appraisal. This is perhaps a function of the field having so little evidence at its heart and so much of it being problematic, but does not help in developing working hypotheses against which to test either new theories or new evidence.

Finally, worthy of close examination because of its importance as the most effective synthesis of Indo-Roman trade since Charlesworth, Tomber's *Indo-Roman trade: from pots to pepper* is (as the title suggests) heavily archaeological. It makes only secondary use of textual or numismatic sources, and does not address specific questions within these fields, such as the slash marks on coins, except in terms of earlier solutions, many of which

---

<sup>112</sup> Young (2001) 210. Raschke (1978) 635.

have become accepted dogma mainly because of their repeated use, rather than because of their internal cohesion. In a survey which covers so much material reliance on others' conclusions is inevitable and appropriate but highlights the danger of insecure conclusions thereby becoming more widely dispersed through the ecosystem of Indo-Roman studies. For example Tomber notes of slashed coins that 'defacement of the Imperial portrait is considered a means by which to remove coinage from circulation (either in India or to prevent its return to the West)'.<sup>113</sup> The complex question of slashed coins is discussed in detail in chapter five, but this is far from the most sensible explanation, despite its prevalence in the literature.

Tomber's analysis is methodologically significant for two features which will hopefully have an impact in future studies. First, it foregrounded the material from recent excavations at the Red Sea port sites at Berenike and Myos Hormos, along with her ceramic analysis of finds from these sites, India and elsewhere in the Middle East, summarising many earlier studies of this material.<sup>114</sup> It also breaks Indo-Roman trade into far smaller regions, functioning as part of a linked system. As an alternative to handling the large amounts of data by dividing it into categories of evidence, this seems a more effective approach to the dispersed and fragmented traces of Roman contact with India. In the case of Tomber's study it is enabled primarily because of her unique knowledge of and access to ceramics, especially *amphorae*, which can be traced to sub-regions far smaller than the Roman Empire. She has also pioneered the identification of Mesopotamian

---

<sup>113</sup> Tomber (2009b) 36.

<sup>114</sup> Tomber (2000) on the ceramic evidence from Egypt, (2004) on south Arabian links to Berenike, Myos Hormos and Aila and south Arabian characters visible on an Indian ceramic vessel, (2005a) on a ceramic link between Aksum and Gujarat, (2005b) on amphorae identified at the site of Pattanam, (2005c) on the link between Egypt and India, (2007) on Roman and Mesopotamian storage vessels found in India, (2008) on further finds from Pattanam.

*amphorae* on Indian sites, many of which had previously been attributed to the Roman Empire, thereby demonstrating hitherto unproven contact between the lands under Sasanian Persian control and the Indian subcontinent.<sup>115</sup>

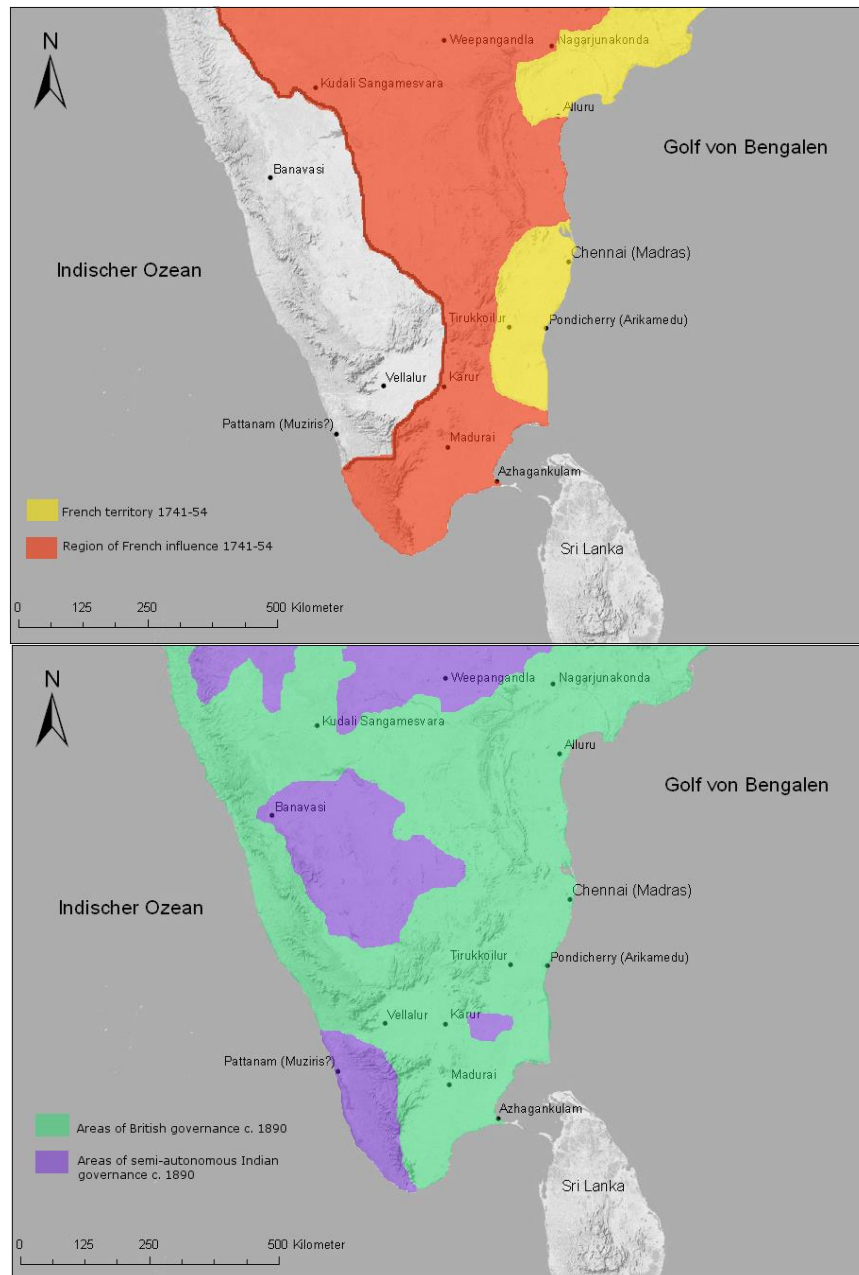
## **2.5 Interpretative discussion**

Alongside the recurrent themes in the conduct of Indo-Roman studies, there are also trends in the motivations for pursuing Indo-Roman studies, which are here termed ‘interpretative questions’ and which have crucial implications for understanding Indo-Roman studies as a discipline. These interpretative questions include the impact of contemporary political circumstances, and especially the circumstances of nineteenth-century imperialism upon the study of Indo-Roman trade and the increasing isolation of Indo-Roman studies from related areas of inquiry with consequences for the conclusions and theories which have come to dominate within the field.

---

<sup>115</sup> For example, 47, 56, 76; 39; this material is dealt with in more detail in Tomber (2007b, 2007c).





**Fig. 2.1:** Map showing the imperial territories held in India by the French in the late eighteenth century and the eventual domination of the subcontinent by the British by the late nineteenth century.

Rawlinson's 1916 review of classical texts from Nearchos to the *Christian Topography* was an early effort to create a narrative of western (including pre-Roman) contact with India. In the context of ideological imports into Indo-Roman studies the final chapter is

significant for its exploration of the impact of Roman contact upon Indian society. The dependence of India upon the west in this narrative is implicit, with both the rise and decline of the trade under Augustus and Nero respectively related entirely to changes within the Roman Empire.<sup>116</sup> Furthermore, the notion that Indo-Roman contact could and should be interpreted in terms of modern imperial models was already a dimension of Rawlinson's scholarly context. Indeed, while not dealing with Indo-Roman trade, only two years before the publication of Rawlinson's work, a legal scholar had published a study entitled *The ancient Roman empire and the British Empire in India: the diffusion of Roman and English law throughout the world*, indicating a perspective on new and ancient global connections, fully reflected in the next significant and systematic work dealing with Indo-Roman trade.<sup>117</sup>

The same perception of Indo-Roman trade as somehow linked to British experiences in India, or as a means of exploring British concerns with imperial governance, continued in Charlesworth's analysis. Underlying Charlesworth's book lay a theoretical framework, centred on a firm conviction of the merits of entrepreneurial capitalism, supported by an imperial infrastructure committed to commercial enterprise.<sup>118</sup> This clear debt to the economic policies and politics of early twentieth-century Britain has visibly and invisibly structured much subsequent work on Indo-Roman trade.<sup>119</sup> Roman

---

<sup>116</sup> Rawlinson (1916) 101, 103.

<sup>117</sup> Bryce (1914).

<sup>118</sup> This is exemplified throughout by Charlesworth's comments and judgements on the trading activities of the Empire: 'Roman traders are met with in Egypt as early as 100 B.C. and occasionally an enterprising capitalist such as Rabirius was able to make a good deal in the royal monopolies' (33); 'with the establishment of the Empire Augustus perceived that it was to his own interest to encourage commerce in every possible way, especially the profitable traffic in the goods of Arabia and India' (58); 'But we may note also the rise of a new class, almost corresponding to our professional class of to-day; we can observe it in the honours paid to physicians and to teachers, in the position held by a man like Galen or Dioscorides, Seneca or Quintilian. It was no longer so shameful to engage in business.' (236).

<sup>119</sup> Glynn and Booth (1996) 122-3.

trade with India became a means by which to explore the implications of Britain's imperial expansion into Asia and subsequently the question, under debate in Charlesworth's political climate, of the best way to bring prosperity and movement towards 'British' values, to the economic zone constituted by that empire.

The use of the British Empire as a model was perhaps even more strongly felt in Wheeler's analysis of Indo-Roman trade, as was the concomitant assumption that the trade must have been dominated by Roman personnel and imperatives. The centrality of the Roman component of 'Indo-Roman' in Wheeler's work was not, however, entirely ideologically driven. Just as the preponderance of Roman literary sources and their perception of India has led scholars to focus on the Roman end of trade between the Mediterranean and the Indian Ocean, so too in archaeology the abundance and documentation of Roman material has proved influential. The desire to attach Indian archaeology to European timelines, for example, was made explicit by Wheeler in his notes when travelling to the subcontinent and was predicated upon the purely practical need to find secure date lines in the Indian archaeological record:

A potential datum line is provided by the impact of Roman commerce upon central and northern India, with the consequent deposition of Roman coins and coin-hoards of known date. The careful correlation of these coins with contemporary Indian cultures is an obvious starting point for research. It has not yet been attempted.<sup>120</sup>

No scholar, however, develops in isolation from their social context. Thus, although the reasons for seeking a connection between the chronology of the Roman Empire and south India were purely pragmatic, Wheeler's instinct when reconstructing

---

<sup>120</sup> Wheeler (1955) 188-9.

Indo-Roman trade was to turn to the models provided by his own experiences. Wheeler's publications were also some of the first since Vincent in the nineteenth century which used modern parallels in an effort to encourage public engagement with the subject of Indo-Roman trade. This is especially striking in his comment that:

it is fair to envisage Indo-European commerce of the 1st century A.D. pretty closely in terms of that of the 17th century; that is, it was based on mutual advantage, endorsed by western privilege and sufficiently regulated to ensure continuity.<sup>121</sup>

It is not immediately apparent what Wheeler meant by the terms 'endorsed by western privilege' and 'sufficiently regulated' but they stand as testimony to an assumed system of regulation and patronage, the agents of which are without question Roman and who subtly take on the guise of merchants of the British East India Company.

Tracing the interpretative themes of Eurocentrism and concern with contemporary politics in the major landmarks in Indo-Roman studies highlights the way in which the field has become structured around such devices. It is also apparent that these tendencies have filtered into more minor studies as assumed facts. Miller's *The spice trade of the Roman Empire* is one such example.<sup>122</sup> Its main aim is to trace the identity of the various botanical products mentioned in western classical sources, then source them in the modern and environmental record. In this respect, it is a textual study. Miller did, however, deploy numismatic data to support his argument, though once again, as illustrative examples of a theory constructed as much on the basis of an ideological conviction that the Roman Empire had sparked the development of eastern commercial systems, as on a foundation of

---

<sup>121</sup> Wheeler (1954b) 125.

<sup>122</sup> Miller (1969).

clear material evidence. This is clear from Miller's conclusion on the subject of the Roman coin finds in India, and their suggested parallel with coin finds in Germany, as grounds for proposing in both regions a similar process of Romanising capitalist development:

A question is: how far do these coin-finds show that it was Roman money that first launched the south Indian trade, as described in the *Periplus*, and that later extended it from north and south throughout the region? Republican coin-finds in Germany reveal the same financial policy. But in India it was sharpened by a more distinctive commercial drive, due to the personal initiative of merchants backed by official support, if only in the form of an enlightened non-interference with their activities.<sup>123</sup>

The inheritance of Charlesworth's view of Roman commercial prowess and globalizing capitalism is here evident.

The precise role of Roman agents and the Roman state has been a long-term focus for debate in Indo-Roman studies, implicitly in the earlier literature, which as in the cases of Charlesworth and Wheeler assumed a high level of Roman dynamism and possibly organised infrastructure, and subsequently explicitly. Raschke has argued most forcefully against the thesis that trade with India was in any capacity generated or regulated by the state.<sup>124</sup> Young too, has argued that imperial policy was never a major contributor to eastern trade. Rather, Young contends persuasively that the only involvement the Roman state appears to have had with eastern trade was to enforce its right to tax it heavily.<sup>125</sup> As McLaughlin's work demonstrates, the field of Indo-Roman studies remains reluctant to abandon the notion of state policy in the east but Young's point is reinforced by both

---

<sup>123</sup> Miller (1969) 232.

<sup>124</sup> Raschke (1978) 605-6.

<sup>125</sup> Young (2001) 181-91.

archaeological and textual analysis.<sup>126</sup> Nevertheless, while Young's work may be free of the Eurocentric consequence of interpreting Indo-Roman trade as being dominated by Roman interest, it nonetheless exhibits the other interpretative tendency in Indo-Roman studies: the desire to make a grand claim for Indo-Roman studies, in Young's case that it was significant to the tax revenue of the Roman Empire.<sup>127</sup> As contemporary political realities have shifted from the dominance of India by western imperial powers to the increasing importance of India as a developing economic and world power, so the desire to explain Indian economic and cultural development by means of contact with Rome has given way to an urge to make the Roman Empire dependent upon its eastern trade, but both are symptomatic of a lack of perspective which has dissociated Indo-Roman studies from the wider fields of Indian and Roman history, within which trade between the Mediterranean and India appears to have been entirely peripheral, as demonstrated by many of the case studies in this thesis.

A final study is worthy of attention because it demonstrates the persistence of the problems highlighted above in Indo-Roman studies. McLaughlin's 2010 work, *Rome and the distant east: trade routes to the ancient lands of Arabia, India and China*, is avowedly both orientalist in its exoticising of the lands it studies and its interest in them and illustrates the other, connected trope of Indo-Roman studies, utilising a particular narrative of Indo-Roman history to speak to the author's perception of the present needs of the western world.<sup>128</sup> Ironically, the mission of McLaughlin's study is to provincialise Rome

---

<sup>126</sup> McLaughlin (2010) acknowledges the likely role of local elites in extracting revenue from the Roman trade with India but attributes this to delegation in accordance with state policy.

<sup>127</sup> Young (2001) 65-80.

<sup>128</sup> McLaughlin (2010) 177-8.

and with it the west's self-centring posturing in the modern world as the inheritors of Rome's 'world empire':

These ancient statements regarding the distant East become significant when modern scholars propagate the grand imperial claims of Roman 'world rule'. The real ancient world was far greater than either the Roman Mediterranean or the fringe territories of northwest Europe. Any well-informed Roman appreciated that Rome only governed a small portion of the earth, and that beyond the eastern frontiers, there existed sophisticated kingdoms that could rival their Empire.

and

The Roman Empire holds a fundamental place in Western notions of identity and civilization. Scholars from Europe and America have therefore placed enormous significance on the history of the Roman state. Yet, in spite of this interest, the operation of the imperial economy remains uncertain. In particular, there is a lack of consensus regarding the revenue system that provided the Roman government with the finances it required to fund its political operations and maintain its professional army.

At the core of this debate is the question of how the early Roman Empire was able to achieve such a remarkable level of economic stability and financial success. The Roman accomplishment seems all the more extraordinary when the economic and political condition of medieval Europe is taken into consideration. Arguably, it is not until the discovery of the Americas that Western Europe had the resources, wealth and opportunities to develop infrastructures comparable to those created by the Roman state. This European revival was connected to expanding commercial interests in the Indian Ocean and the Far East. Yet while this recent aspect of the past is firmly acknowledged, the role Eastern commerce had in Roman civilization has never been comprehensively studied.<sup>129</sup>

Whether these perceptions of the modern and ancient world by McClaughlin are accurate or not, it is clear that his study continues to privilege a narrative with Rome at its heart and which emphasises the importance of the Roman Empire in negotiating and regulating contact with the east. His evidence base, despite some efforts to use eastern sources, is almost entirely classical and textual and, contra Young or Raschke (though without

---

<sup>129</sup> McClaughlin (2010) 2-3, 141.

explicitly responding to either), it assumes and argues for a very high level of state organisation and bureaucratisation of trade by the agents of Rome.<sup>130</sup> This study is not representative of Indo-Roman studies either for its startling weaknesses or particularly grandiose rhetoric but it is striking that such a study could still emerge today, citing the same reasons for study and largely the same conclusions as the work of Charlesworth a century earlier (albeit with the motives altered for current fashion).

## **2.6 Beyond the British academy**

The foregoing analysis has concerned itself entirely with English-language and British scholarship.<sup>131</sup> The centrality of British scholarship to Indo-Roman studies and the links illustrated above between perceptions of Indo-Roman trade and the involvement of the British East India Company with India are significant features of the field to be noted. Other national traditions have emerged in Indo-Roman studies but they remain centred on a narrative dominated by the British academy. Perhaps the most important of these is the other strand of Anglophone scholarship, which since 1945 has emerged from India itself. Nevertheless, while the study of the Indian Ocean and south Indian maritime commerce from the coming of Islam to the modern period has witnessed significant and diverse contributions by Indian scholars, and indeed Indian scholarship has come to frame many of the most important debates in the field, study of the earliest phase of historically documented contact, the Indo-Roman and Indo-Byzantine periods, remains largely the

---

<sup>130</sup> McLaughlin (2010) 5, 18-19.

<sup>131</sup> Roberta Tomber is here included in the survey of British, Anglophone Indo-Roman studies due to her long-standing affiliation with the British Museum. There is, at present, no Anglophone US school of Indo-Roman studies with the exception of archaeological excavations mainly to the Red Sea organised by US universities, covered elsewhere in this chapter and chapter six.



preserve of westerners.<sup>132</sup> Indian scholarship since 1955 has primarily consisted of numismatic notifications of new discoveries of Roman coins in the subcontinent, and in archaeological publications of excavated sites within India.<sup>133</sup> Historical analysis of textual sources relevant to Indo-Roman studies has remained somewhat marginal in Indian scholarship. Expertise and interest in western classical sources for the period under question is minimal.<sup>134</sup> Pre-modern history and archaeology in India is also not a popular area for study or research,<sup>135</sup> and the majority of scholars working in the field are from north India, without expertise in Dravidian languages, especially the complex and esoteric language of the Tamil epics, the *Cankam* poems, whose use for understanding pre-Islamic commerce between the Mediterranean and India is discussed extensively in chapter seven.<sup>136</sup> Meanwhile, scholars with the necessary linguistic expertise often have a partisan interest in representing these texts as cornerstones of a Dravidian nationalist reconstruction of the Indian past.<sup>137</sup>

---

<sup>132</sup> Chakravarti (2002); Prakash (2004a, 2004b).

<sup>133</sup> In chronological order: Sankalia (1955), Sankalia, Subbarao and Deo (1958), Deva and Misra (1961), Gupta (1965), Sharma (1969a, 1969b), Sinha and Narain (1970), Subrahmanyam, Banerjee, Khare *et al.* (1975), Tripathi (1976), Murthy (1977), Ghosh and Ismail (1980), Gupta (1984), Kandaswamy (1984), Kulkarni (1984), Narasimha Murthy (1984), Nagaraja Rao (1987), Ray (1987), Singh (1988), Srinivasan and Reiniche (1989), Sundararajan (1991), Krishna Sastry (1992), Krishna Sastry, Subrahmanyam and Rama Krishna Rao (1992), Satyamurti (1992), Kasinathan (1993), Krishnamurthy (1993), Lal (1993), Satyamurthy (1993), Krishnamurthy (1994), Prasad (1994), Soundara Rajan (1994), Gopal (1995), Nagaswamy (1995), Radhakrishnan (1996a, 1996b), Krishnamurthy (1998), Radhakrishnan (1999), Hebalkar (2001), Suresh (2004), Krishnamurthy (2005), Sridhar (2005), Krishnamurthy (2006a, 2006b, 2007), Suresh (2004, 2007, 2010, 2011).

<sup>134</sup> Express News Service (Thiruvananthapuram) (May 14 2009) advertised the new opportunity offered in conjunction with the Kerala Council for Historical Research, which is excavating the 'Indo-Roman' site of Pattanam, for students to take six-week Greek and Latin language courses in Thiruvananthapuram. Such an opportunity is rare in the subcontinent.

<sup>135</sup> Chakrabarti (2003) 185.

<sup>136</sup> Significant exceptions to this are P. V. Radhakrishnan and S. Suresh, who combine a thorough knowledge of classical Tamil with training in numismatics and archaeology respectively.

<sup>137</sup> Kandaswamy (1984), Shastri (1992).

There have, however, been some important efforts to address the subject of trade, as this occurs in the *Cankam* and Sanskrit literature.<sup>138</sup> One important scholar working on early maritime trade in India is Himanshu Prabha Ray, whose work on the maritime and early history of India, especially the Satavahana Empire (*fl. c.* 230 B.C.-A.D. 220, expanding from a capital in modern Andhra Pradesh), has lent a vital change in perspective to Indo-Roman studies by focussing primarily on the internal economic context of India.<sup>139</sup> Her work on the importance of Buddhist monastery guilds, on the conceptualisation of maritime space, combining training in the Indian and British academy, and the meaning or value of mercantile seaborne networks for the construction of Indian society in the early phase of Roman and Byzantine contact with India is useful for two reasons. First it is based heavily on the epigraphy of the Satavahana state, the dating of which is contested but provides an independent chronological measure not based upon Roman sources.<sup>140</sup> Second, it consciously takes India as the starting point for examining Indo-Roman contact and thereby inverts the usually Eurocentric approach to this epoch of commercial history. Nonetheless, while Ray is more sensitive to, for example, the importance of intra-subcontinental trade routes than traditional narratives have been, some of the same assumptions and narratives find their place in her interpretation: the dominant role of trade with the Roman empire in stimulating commerce in India and the importance of situating Indo-Roman trade in the historiographical context of India's connections to the western world.<sup>141</sup>

---

<sup>138</sup> Ray (1988).

<sup>139</sup> Ray (1986, 1989, 1996a, 1996b).

<sup>140</sup> Ray (1986) 33-5 on the disputed chronology of the Satavahanas.

<sup>141</sup> Ray (1996a) 356 on Mediterranean demand driving increased trade in the Bay of Bengal. Ray (1988) 318 and (1996) 353-5 on ceramic evidence for networks within the subcontinent.

In the field of numismatics, Roman coins in India have gained surprising popularity in the subcontinent. Roman coins are mentioned almost without exception in general publications on numismatics and coin collecting, albeit not in any detail.<sup>142</sup> Roman coins in India have been projects for many of the most prominent numismatists in the Indian tradition. P. L. Gupta, the founding father of post-independence Indian numismatics, republished an updated version of Wheeler's list of Roman coin finds.<sup>143</sup> P. V. Radhakrishnan, currently the director of the Reserve Bank of India Monetary Museum and holder of the P. L. Gupta medal for numismatics, is presently working on a list of Roman copper coins found in India.<sup>144</sup> Narasimhamurthy, one of the leading numismatists from Kerala, published a list of Roman coins found in the state.<sup>145</sup> It is a subject of study which, in relation to archaeological excavations, garners financial support from outside the subcontinent. S. Suresh has been funded since the late 1990s by the Italian government to produce publications relating to Indo-Roman trade, including numerous trips to Europe to collect data on Roman coins found in India but presently residing in European collections.<sup>146</sup> Directors of archaeology have also published coins found in their jurisdictions.<sup>147</sup> While these studies are invaluable in providing new data for analysis, they are often produced by scholars with limited experience or training in examining Roman coins, and can therefore frequently contain factually incorrect information.<sup>148</sup> In addition to

---

<sup>142</sup> Hendy (1985) 277, Hudson (1931) 98, Leslie and Gardiner (1996) 12, Lopez (1951) 211.

<sup>143</sup> The list appears as an appendix to Gupta (1965) but Turner (1989, 4) points out that Gupta's list is a largely unedited reproduction of the list compiled under Wheeler's direction in 1946.

<sup>144</sup> Pers. Comm., February 2011, Mumbai.

<sup>145</sup> Satyamurti (1992).

<sup>146</sup> Suresh (2007) vi-vii.

<sup>147</sup> For example, Nagaraja Rao (1987), Sridhar (2005) 17, 128.

<sup>148</sup> Day (2012a) 5-14.

publications of coins, the excavations of various sites with relevance to Indo-Roman and Indo-Byzantine trade have been published in the subcontinent since 1955.<sup>149</sup>

The other major body of scholarship is that of the French academy. The work of Salles has been crucial in highlighting India's interaction with the Arabian Peninsula and the Persian Gulf and in furthering research into the earliest Hellenistic connections between India and the west.<sup>150</sup> French excavations have also featured in the history of Indo-Roman studies. The site of Arikamedu was excavated in the 1940s by a French team under the direction of Faucheux and Surleau based in Pondicherry and later by Casal, who also excavated other contexts around Pondicherry; and north Indian sites linked to the landward routes to the Mediterranean, including Aī Khanoum in modern Afghanistan, have been the subject of major excavations by French archaeological missions.<sup>151</sup> The Indo-French Cultural Centre and Museum in Bengal sponsors archaeological investigations and houses a collection including ceramics of the early centuries A.D.<sup>152</sup> Nevertheless, the synthetic works by French scholars have generally demonstrated similar preoccupations and assumptions to those of British scholars. D'Alviella (1926), exploring the impact of classical Greek culture on India, shares the underlying assumption of Charlesworth and other early British scholars that the dynamic and relevance of contact should be understood from west to east.<sup>153</sup> Salles' work further demonstrates an identical assumption of the dominance of western demands and western actors in driving trade and

---

<sup>149</sup> Arikamedu: Begley (1983, 1988). Azhagankulam: Sridhar (2005), Nagaswamy (1991). Pattanam: Cherian, Prasad, Dutta *et al.* (2009). Nagarjunakonda: Murthy (1977), Subrahmanyam, Banerjee, Khare *et al.* (1975).

<sup>150</sup> Salles (1987, 1995, 1996, 2002), Salles and Sedov (2007).

<sup>151</sup> Aī Khanoum: Bernard (1973, 1983, 1985), Bernard, Guillaume, Francfort *et al.* (1984), Guillaume and Liger (1983), Leriche (1986), Veuve, Liger and Lecuyot (1987). Arikamedu: Casal (1949, 1956), Faucheux (1945), Pattabiramin (1946), Surleau (1946) 195.

<sup>152</sup> [www.institutedechandernagore.govt.in](http://www.institutedechandernagore.govt.in) (accessed 23/4/2011).

<sup>153</sup> D'Alviella (1926).

restructuring it away from what is presented as a highly *ad hoc* and unstructured native affair (contrasted with what is perceived to be a more systematised Roman/western commerce).<sup>154</sup> There have also been some significant works of translation of classical texts into French, including the *Christian Topography* (though this cannot really be considered part of the field of Indo-Roman studies, since Wolska-Conus' interest appears primarily to have been in the theological sections of the text and her handling of Book Eleven is perfunctory).<sup>155</sup> Filliozat and André are worthy of mention for their work on early Roman textual references to India and trade with the east, as are Fussmann's efforts to reconstruct Indian political history from the *Periplus of the Erythreian Sea*. In the tradition of textual studies, the work of Meile on references to the *Yavanas* in Tamil literature represents an early effort to tackle this complex problem, though the debate remains steadfastly unresolved (see chapter seven).<sup>156</sup>

In the field of numismatics, the German scholar Berghaus is notable for his recording and publication of Roman and late Roman coin finds in India.<sup>157</sup> Viewing Indo-Roman studies from the broader perspective of fields of study directly relevant to it, the international flavour of scholarship becomes more varied and the British dominance less pronounced. The archaeology of the Red Sea has involved various US university expeditions.<sup>158</sup> The inscriptional evidence from the Arabian Peninsula has mainly been collated and edited by French scholars.<sup>159</sup> Italian scholarship on the *Periplus of the*

---

<sup>154</sup> Salles (1996) 263-4.

<sup>155</sup> Wolska-Conus (1968) 36.

<sup>156</sup> André and Filliozat (1986), Fussmann (1991), Meile (1940-41), Wolska-Conus (1968, 1970, 1973).

<sup>157</sup> Berghaus (1990, 1991, 1992a, 1992b, 1992c, 1993a, 1993b, 1993c, 1994, 1998, 2006).

<sup>158</sup> Aila (Aqaba) was excavated in the 1990s by Tom Parker (North Carolina State University): Parker (1996, 1997, 1998a, 1998b, 1999, 2000, 2009). Whitcomb and Johnson's Quseir al-Qadim excavations were conducted under the aegis of the American Research Center in Egypt: Whitcomb and Johnson (1979, 1983), Whitcomb and Johnson (1982), Burke (2004).

<sup>159</sup> Bernand, Drewes *et al.* (2000).

*Erythreian Sea* is perhaps the only body of work to approach the text as text rather than as a largely objective source for reconstructing Indian Ocean trade.<sup>160</sup> Perhaps the most international locus for Indian Ocean studies is the Aksumite Empire, which has received scholarly attention from British, Ethiopian, French, German and Italian scholars. The somewhat separate sphere of Aksumite scholarship is explored in more detail in chapter four but is connected to Indo-Roman studies by similar themes of Eurocentrism and a tendency (until recently) to overstate the importance of commerce.<sup>161</sup>

## 2.7 Conclusion

Since the 1787 publication of Roman coins in India, much ink has been spilled on the subject of pre-Islamic connections between the Mediterranean and India. This has included the publication of invaluable new archaeological, numismatic and textual data. British scholarship has dominated efforts to synthesise this material and it has in turn been dominated by a variety of methodological and interpretative strategies with clear strengths and weaknesses that continue to shape the subject. A long-term commitment to multi-disciplinary approaches to the question of Mediterranean trade with India has given Indo-Roman studies a breadth and perspective which extends considerably beyond reliance on classical textual sources. However, especially as it becomes more imperative for scholars

---

<sup>160</sup> Belfiore (2004) provides a new edition and translation of the *Periplus of the Erythreian Sea* alongside the P. Vindob G 40822 (or Muzyrus) papyrus and the *Parthian Stations* of Isidore of Charax. Meanwhile Janni (1984) has perhaps contributed most to a discussion of the *Periplus* as a text which reflects ancient attitudes towards space, rather than as a 'guidebook'.

<sup>161</sup> British scholarship on Aksum: Bard, Fattovich, Manzo *et al.* (1997), Munro-Hay (1989a, 1989b, 1989c, 1995, 1996, 1999), Munro-Hay and Juel-Jensen (1995), Peacock and Blue (2007), Phillipson (2009), West (2002, 2003a, 2003b, 2004, 2005, 2006). Ethiopian scholarship on Aksum: Sergew (1964, 1972). French scholarship on Aksum: Anfray (1963, 1965, 1972, 1974), Contenson (1963), Desanges (1969). German scholarship on Aksum: Hahn (1983, 2002a, 2002b, 2002c, 2005, 2006a, 2006b, 2007), Littmann (1906, 1913), Metlich (2006), Ziegert (1980, 1995, 2002). Italian scholarship on Aksum: Mordini (1960), Paribeni (1907).

to rely on the conclusions of their peers in order to manage the volume of data and incorporate the results of increasingly specialist fields, a new multi-disciplinary method is required, which focuses on the complications and contingencies of every evidence type. Not only the conclusions, but the security of the conclusions reached, need to be a part of future studies, as well as, where possible, some indication of the alternative conclusions available. The alternative is to continue to build houses of cards in which a series of 'best fit' but not necessarily most likely conclusions are linked together into streamlined but fragile narratives.

Interpretatively, a Eurocentrism which places the Roman Empire at the heart of any study of Indo-Roman trade is beginning to be challenged, especially by Indian scholarship on the interaction of Roman traders with networks internal to the subcontinent. Nevertheless, Indo-Roman studies tend to be framed around questions which have at their heart the assumed role of Romans as drivers of trade with India both as consumers and merchants. Increased focus in this thesis on the evidence from the subcontinent may begin to alter this. The Eurocentrism of Indo-Roman studies which places Rome at the heart of the narrative and seeks to see in Roman interaction with India a reflection of contemporary concerns (whether these are how to manage a global empire or how to provincialise western Europe in a globalizing world market) is fostered by the increasing disciplinary division, which has isolated Indo-Roman studies increasingly from neighbouring fields. Its conferences and publications increasingly have little connection to wider Indian or Roman history, demonstrated by the general absence of anybody working on Roman trade with India at a sample of major conferences on the Roman economy over the last five years. The same is less true of south Asian studies, in which major conferences and publications

often include contributions about this trade alongside work on wider social and economic structures, but here, as the ongoing debate about how far state structures in India were generated by contact with (western) foreigners demonstrates, there is still a tendency for Indo-Roman studies to dominate debates in which it should probably only be a minor participant.

The above trends reflect a subject area that has major strengths, including a fairly coherent disciplinary identity (albeit one in which non-Anglophone scholarship is not always fully included), a consistently high level of interest, since the nineteenth century, which has recently been boosted by the advent of new archaeological data, especially from Egypt, and a strong commitment to combining multi-disciplinary approaches to tackle a central question: how Roman contact with India occurred. These trends, however, also run the risk of generating self-referencing narratives which overstate the importance of the subject to surrounding fields. While it is legitimate to ask questions about the role of Indo-Roman trade in the economic systems of Rome, India and the other regions through which trade passed, the frequency with which Indo-Roman scholarship makes grand claims for the significance of this trade to the rise and fall of kingdoms and empires, and the fragility of these claims given the paucity and complexity of evidence suggests a field which needs to step back and see the tree as part of a forest of economic interactions within and between states, in which Mediterranean trade with India was not demonstrably of great general significance. A corollary danger within Indo-Roman studies is that of approaching multiple evidence sources from the direction only of the most dramatic conclusions drawn from them (or the conclusions most convenient to a specific narrative) in order to support large claims about his trade. It is imperative for the continued development of the



discipline, though, to focus more closely on how much is uncertain, unknown or missing from the evidence currently available. If these seem like negative conclusions, it is hoped that they will be borne out convincingly in this thesis. Putting Indo-Roman trade into a wider historical perspective may diminish it with respect to its own self-image, but may enable it to be incorporated and considered by other fields more effectively as well.

### CHAPTER THREE: THE *PERIPLUS OF THE ERYTHREIAN SEA* AND THE *CHRISTIAN TOPOGRAPHY*, BOOK ELEVEN

#### 3.1 Introduction

In the study of pre-modern contact between the Mediterranean and the Indian Ocean, two texts are of vital importance as the only substantial narrative accounts of this trade. *The Periplus of the Erythreian Sea* and Book Eleven of the *Christian Topography* were both written in Greek, probably in Egypt or at least by men closely connected with Egypt. They were written probably five centuries apart (in the first and sixth centuries respectively) and contain detailed information about traded goods, cultural practices and the geography of the routes between the Red Sea and the west coast of India. These texts have, however, received very different treatment within and beyond Indian Ocean studies. The aim of this chapter is to argue that these two texts have more in common as literary productions than a focus purely on them as sources for Indo-Roman trading relations has recognised. They should be considered to share in the tradition of classical literary geography with requisite strengths and weaknesses as sources for commerce. This chapter also examines the importance of manuscript studies and the editing and translation of both texts for shedding light on Indo-Roman studies and Byzantine manuscript and literary production.

Both texts are here assessed from the perspectives of genre and transmission. In the case of the *Periplus of the Erythreian Sea* a much-needed discussion about the genre of the text has never occurred. In the case of the *Christian Topography* debate has recently

renewed as to the aim and purpose of the text, which has direct relevance for Book Eleven and Indian Ocean studies. This chapter will begin with this new debate and with the *Christian Topography* and will then examine the *Periplus of the Erythreian Sea* in light of the conclusions of that discussion and the wider question of the usefulness of considering *periploi*, or sea itineraries, as a distinct literary type. The decision to work in reverse chronological order from the *Christian Topography* to the *Periplus* reflects the wider contention of this thesis that Indo-Byzantine studies provides a critical vantage point from which to re-examine Indo-Roman studies as a discipline.

### **3.2 The *Christian Topography* (Book Eleven)**

The *Christian Topography* and the eleventh book of the work in many respects warrant separate treatment, but have instead received a compromise between separate and collective examination. The *Christian Topography* is a multi-chaptered work, datable by internal references most probably to the middle of the sixth century.<sup>162</sup> Its construction as a text is described in detail by the author, along with its purpose: the first five books, which propose a Christian cosmology in accordance with scriptural exegesis, and in particular with the model of the tabernacle, were written and made public first with the aim of purifying Christian thought of the error of pagan, Greek theory. The argument seems to have received a hostile reaction though precisely from whom is unclear. A following five books of explanation were then added to expand upon the arguments and respond to objections.

---

<sup>162</sup> Wolska-Conus (1968) 15-16 cites in particular the evidence of two eclipses mentioned in the work, which she dates to 547 and 549, thereby providing a *terminus post quem* for the work. Huxley (1980) argues for the earlier date of 518-19 but this date has not been widely accepted.

Πρῶτον μὲν πάντων παρακαλῶ τοὺς μέλλοντας ἐντυγχάνειν τῆδε τῇ βίβλῳ, ἵνα μετὰ πάσης προσοχῆς καὶ ἐπιμελείας τὴν ἀνάγνωσιν ποιήσονται, καὶ μὴ παρέργως αὐτὴν διαδραμεῖν, ἀλλὰ καὶ τοὺς τόπους καὶ τὰ σχήματα καὶ τὰς ἐγκειμένας ἱστορίας μετὰ πάσης σπουδῆς φιλοπόνως ἀπομάξουσιν, καὶ μετὰ τὸ τέλος δὲ τῆς βίβλου ἐγκυψάτωσαν καὶ τῷ τόμῳ τῷ παρ' ἡμῶν γενομένῳ πρὸς τὸν φιλόχριστον Κωνσταντῖνον, ἐν ᾧ περ καταγράφεται πλατυτέως πᾶσα ἡ γῆ, ἥ τε πέραν τοῦ Ὠκεανοῦ καὶ αὐτῆ, καὶ πᾶσαι αἱ χῶραι, ἔτι τε καὶ τὰ νότια μέρη τὰ ἀπὸ Ἀλεξανδρείας ἕως τοῦ νοτιαίου Ὠκεανοῦ, λέγω δὴ ὁ Νεῖλος ποταμὸς καὶ αἱ παρακείμεναι χῶραι καὶ τὰ ἔθνη τῆς τε Αἰγύπτου πάσης καὶ Αἰθιοπίας, ἔτι τε καὶ ὁ Ἀράβιος κόλπος καὶ αἱ παρακείμεναι χῶραι καὶ ἔθνη ἕως πάλιν τοῦ αὐτοῦ Ὠκεανοῦ, ὁμοίως καὶ ἡ μέση γῆ τοῦ τε ποταμοῦ καὶ τοῦ κόλπου καὶ αἱ πόλεις καὶ αἱ χῶραι καὶ τὰ ἔθνη τὰ ἐν αὐτῇ, πρὸς τὸ δεῖξαι τὰ παρ' ἡμῶν μὲν λεγόμενα ἀληθῆ, τὰ δὲ τῶν ἐναντίων ψευδῆ, δι' οὓς καὶ ἡ βίβλος καὶ αἱ καταγραφαὶ γεγόνασιν αἱ ἐγκείμεναι, περὶ τε μεγέθους ἡλίου λέγω καὶ τῆς διακεκαυμένης καὶ διαβοωμένης αὐτῶν ἀοικίτου γῆς, ὡς πλάσματα καὶ μύθους ἐρευγομένων. Ζητησάτωσαν δὲ πάλιν τὸν σκάριφον τοῦ παντὸς καὶ τῆς ἀστρώας κινήσεως, τὸν παρ' ἡμῶν γεγόμενον κατὰ μίμησιν τῆς ὀργανικῆς τῶν ἔξωθεν σφαίρας, καὶ τὸν περὶ αὐτοῦ λόγον πρὸς τὸν θεοφιλέστατον διάκονον Ὁμόλογον ἀποσταλέντα, καὶ ἐγκυψάτωσαν, ὅστις τε σὺν Θεῷ ἱκανὸς ὑπάρχει, μάλιστα σὺν ταύτῃ τῇ βίβλῳ καὶ τῷ τόμῳ ἐκ βάθρων ἀνελεῖν τῶν ἐλληνικῶν ὑποθέσεων τὴν πλάνην. Ταῦτα γὰρ τις τὰ τρία χριστιανὸς ὑπάρχων καὶ κτώμενος καὶ τῇ θείᾳ χάριτι περὶ τὴν θείαν Γραφὴν ἐπιμελῶς κινούμενος π[ρ]αδίδως ἐλ/γχει τῶν μυθολόγων τὴν ἄνοιαν. Συνίστησι γὰρ δι' αὐτοῦ τοῦ σχήματος καὶ τῆς φύσεως τῶν πραγμάτων τὴν θείαν Γραφὴν ἀληθεστάτην οὖσαν καὶ τῶν χριστιανῶν τὸ κήρυγμα.<sup>163</sup>

Thus the surviving introduction refers to a ten-book cycle. The work is preserved in three manuscripts, dating from the ninth to the eleventh centuries.

<sup>163</sup> Prologue (1-2) from Wolska-Conus (1968). 'First, I beg those who intend to read this book to read with full attention and care, and not to view it superficially but to take a wholly careful, diligent impression of the places and the figures and the stories included, and after they have reached the end of the book to go to the book which was made by us for the Christ-loving Konstantinos, in which the earth is described more fully, that which lies across the ocean and here, and all the places, even those south of Alexandria up to the southern ocean, I say indeed the River Nile and the places lying along it and the people of the whole of Egypt and Ethiopia, also indeed the Arabian Gulf and the places along it and the people, again up to the ocean, even the land between the river and the gulf and the cities and the places and the people in it; both the book and the diagrams occurring in it [are] in order to show that these things said by us are true, those said by our opponents are lies; I speak concerning the size of the sun and the hot and widely-spoken uninhabited earth, as spewed out falsehoods and myths. They should examine again the sketch of everything and of the movement of the stars made by us in imitation of the instruments of the outer sphere, and the address concerning this given to the most Christ-loving deacon, Homologos, and they should indeed destroy with this book and this volume from the foundations the Greek hypotheses and deceits; this begins fittingly with God. For any Christian having these three books and supported by divine grace, carefully consulting divine scripture, can easily refute the madness of the myth-makers. For it sets together the shape and the structure of the world and by the nature of things the Holy Scripture and those things proclaimed by Christians are true'. [All translations from the *Christian Topography*, unless otherwise stated, are the author's.]

The ninth-century Vatican copy of the manuscript contains the ten books of cosmological argumentation.<sup>164</sup> The eleventh-century copies now held by the Laurentian Library in Florence and by St Katharine's Monastery on Mount Sinai both contain an additional two books: Book Eleven on the plants and animals of India and the island of Taprobane and Book Twelve, providing a summary of the conclusions of the preceding chapters.<sup>165</sup> The ninth-century Byzantine patriarch and bibliophile, Photios, also wrote a summary of the work, often termed the 'condemnation of Photios'.<sup>166</sup> This summary refers to the book having twelve chapters, thus although the Vatican copy of the manuscript is earlier and contains only ten books it does not necessarily follow that it is an earlier version of the original text than the Laurentian or St Katharine copies. Rather, by the ninth century it appears that the text had acquired two additional chapters. Two different recensions of the text, assumed to derive from a lost 'Text X', were then made. One, in ten-book form survives in a ninth-century copy at the Vatican. The other survives in two related eleventh-century copies now preserved in Florence and on Mount Sinai.

Of the author, nothing is known outside the clues yielded by the text.<sup>167</sup> The name usually given, 'Kosmas' is most likely a later addition and the text should rightly be considered anonymous, though the attribution has become so firmly established that even scholars willing to acknowledge its arbitrariness continue to call the author 'Kosmas'.<sup>168</sup>

---

<sup>164</sup> Vatican Gr. 699, hereafter referred to as recension V.

<sup>165</sup> Sinai Greek 1186, hereafter recension S and Florence Laur. Plut. 9.28, hereafter recension L.

<sup>166</sup> Photius, *Bibliotheka* 3.36. Despite the common use of the term 'condemnation', Clark (2008) 20-23 argues convincingly that Photios' judgement on the text was disparaging rather than condemnatory, and certainly does not seem to have constituted a condemnation in the ecclesiastical sense of labelling it heretical or dangerous.

<sup>167</sup> There have been attempts to identify the author, for example, as the writer Stephen of Antioch. Kominko (2013) provides a full discussion of the arguments and refutes the proposed identification.

<sup>168</sup> Anastos (1946) 77 argued that there was no convincing reason to suppose that Cosmas was not the name of the author. Nor, however, is there any convincing reason to suppose that it was. Even in recent scholarship use of the name Kosmas/Cosmas, with or without a reference to the debates over the identity of the author, is

He speaks of himself as having been a merchant and having travelled at least to the kingdom of Aksum but it is not certain from the text whether he personally travelled farther east to India or Sri Lanka.<sup>169</sup> It is clear from his style of writing and his references that he was well-read and familiar with literary debates in Alexandria but was not highly educated (or at least, did not excel in rhetorical training if he had received any).<sup>170</sup>

Responses to the text in scholarship are detailed by Clark, and demonstrate two consistent threads. First, the text has been widely condemned and disparaged because of its ‘unscientific’ premise and scriptural logic.<sup>171</sup> This ridicule of the author as a ‘know-nothing’ and a harbinger of the Dark Ages (based on the erroneous contention that the text led to a medieval belief that the Earth was flat) is so pervasive that even Clark in his defence of the right of the text to be treated as a cultural production of its own society, rather than measured against the yardstick of modern scientific progress, still comments that ‘[r]ather than arguing by model, or empirical observation, he instead *resorted* to anagoges and allegory, using the scriptures as his guide’.<sup>172</sup> The second strand which Clark picks out is the centrality of art history to responses to the text. It has become a core text within Byzantine studies precisely because of the lavish and numerous images which accompany all of the surviving copies and much of the debate has focussed around the images within the text and the tradition of Byzantine artistic tradition.<sup>173</sup>

---

common. Examples include: Clark (2008) 10§11 who concedes that the name is almost certainly a later addition but continues to use it as a shorthand, Peacock and Blue (2007) 4, Whitehouse (2009) 99.

<sup>169</sup> *Christian Topography*, Book Two, 56.

<sup>170</sup> Kominko (2008) 141, Wolska-Conus (1968) 38-43.

<sup>171</sup> Clark (2008) 33-5.

<sup>172</sup> Clark (2008) 32 [emphasis mine].

<sup>173</sup> Some of the most important studies of the text, outside critical editions or translations have been in chronological order Mouriki (1970), Weitzmann (1970) and Brubaker (1977), which all had an art-historical interest in the text.

A further theme in the study of the *Christian Topography* which Clark does not identify but does replicate is the tendency to marginalise or simply ignore the last two books of the twelve, and especially Book Eleven. These two books have been included in every translation of the text, but often receive little critical attention.<sup>174</sup> The most recent and detailed translation, comparing all three manuscripts duly includes Book Eleven with minimal introduction and reproduces the images but does not engage in any serious discussion of the creation of this book, its addition to the preceding ten books, or of its connection with them.<sup>175</sup> Clark makes the statement that ‘Chapter eleven is taken from a popular geography and travelogue from Kosmas' travels to India that describes the flora and fauna of India and Taprobane’.<sup>176</sup> It is unclear whence this view is derived. The introduction of the book does not identify it as belonging to any other work. Even if Book Eleven was added into one version of the text in or before the ninth century from a previously independent work, the addition of Book Twelve in the L and S versions, creating a new conclusion and embedding Book Eleven structurally in the text suggests that it was perceived to fit with the other books in some way. Book Eleven was not simply added onto the end of the *Topography* for the copyist's convenience.

Book Eleven is, therefore, something of an oddity. It is illustrated though the images are not introduced in the same fashion as images elsewhere in the *Topography*, for which Clark has delineated the common formula:

---

<sup>174</sup> Montfaucon (1708 into Latin); McCrindle (1897 into English); Wolska-Conus (1968-1973 into French); Schneider (2010 into German).

<sup>175</sup> Wolska-Conus, for example, provides an analytical summary of each of the books of the *Topography* (19-36), each description of more than a page, but collectively describes books eleven and twelve thus: ‘Les livres XI et XII, absents du *Vat.* Ajoutés plus tard à la *Topographie*, sont peut-être des fragments de l'ouvrage perdu sur la géographie.’ (36) [Books XI and XII, absent from the Vatican copy. Added later to the *Topography*, they may be fragments from the lost work on geography].

<sup>176</sup> Clark (2008) 15.

When speaking of the image, he uses the term *diagraphia*, consistently, and often strengthens those references with the rather didactic phrase “we have delineated (*diagrapsei*)” to indicate the image was intentionally formed for this discussion.<sup>177</sup>

By contrast, the images in Book Eleven are most commonly introduced ‘τοῦτο τὸ’, thereby breaking with the discursive style of the previous ten books but preserving the clear implication that the text was originally illustrated and that the reader was meant to consult the images while reading.<sup>178</sup> Its form is somewhat abrupt, detailing the flora and fauna of India and describing the island of Taprobane, but situating these in no larger narrative. It does, however, have a connection to other parts of the work, since in Book Two the author gives an account of some of his travels to the kingdom of Aksum, and when speaking of the rhinoceros refers to having seen them in person during his visit as well as drawing them from the specimen in the imperial collection:

Τεθέσμαι δὲ καὶ ζῶντα ἐν τῇ Αἰθιοπία ἀπὸ μακρὰν ἰστάμενος καὶ νεκρὸν ἐκδαρὲν καὶ καταγγισθὲν ἄχυρα καὶ ἰστάμενον ἐν οἴκῳ βασιλικῷ, ὅθεν ἀκριβῶς κατέγραψα.<sup>179</sup>

The extent to which Book Eleven is regarded as peripheral in Byzantine manuscript and art historical studies contrasts sharply with the treatment of the *Christian Topography* in Indian Ocean studies. Here, Book Eleven is widely known and cited in almost all studies of trade between the Mediterranean and the Indian Ocean in the pre-Islamic world.<sup>180</sup> It is

<sup>177</sup> Clark (2008) 114.

<sup>178</sup> Of the ten images captioned in Book Eleven four (the ῥινόκερος (rhinoceros), ταυρέλαφος (buffalo), μονόκερος (unicorn) and δένδρον τοῦ πιπέρεως (pepper tree)) are introduced ‘τοῦτο τὸ’ (‘this is’) and a further four are introduced with the similar formulation ‘τὸν δὲ’ (χοιρέλαφον (wild pig) and ἵπποπόταμος (hippopotamus)), ‘τὸ δὲ’ (μόσχος (musk deer)) or ‘ἡ δὲ’ (καμηλοπάρδαλις (giraffe)).

<sup>179</sup> Book Eleven, 1.2 (Wolska-Conus 1973). ‘I have seen this animal in Ethiopia, at a distance and dead and stuffed with chaff in the home of the king, whence I have drawn it precisely.’

<sup>180</sup> Including: Bopearachchi (2002) 92, (2006a) 190, Cappers (2006) 78, Carswell (1991) 199, Chami (1999) 211, De Romanis (1997) 187-8, Devendra (2002) 168, Hudson (1931) 110, Miller (1969) 159, Nilakanta



still even in recent scholarship on occasion cited from McCrindle's highly problematic 1897 translation.<sup>181</sup> The use of Book Eleven usually shears it of all but a perfunctory mention of the other associated chapters.

In this context, the most recent publication on the subject of the *Topography*, while still ignoring Book Eleven, offers helpful insight. Kominko has argued that rather than being seen as a unique cultural creation, the *Christian Topography* should be viewed as falling intentionally within the sphere of classical geographical writing. It was a consistent effort to marry the Christian scriptural tradition with pre-existing worldviews in a way which was certainly uncommon and clearly (from the author's need to write an additional five books responding to criticism) not considered very convincing, but failure to write convincingly in a genre should not be mistaken for intentional eschewing of that genre.<sup>182</sup>

Kominko's arguments, though not framed around Book Eleven, have important implications for Indian Ocean studies. If the work is considered to be one of classical geography then the role of Book Eleven becomes clearer. Its arrangement of animal and vegetable 'case studies' and even the extended excursus on Taprobanê are not unlike similar discussions of plants, animals and places to be found in other geographical works, such as Strabo and Ptolemy.<sup>183</sup> The use of these examples to reinforce the worldview of the author also fits the wider evidentiary pattern of the *Topography*. That the worldview is distinct from that of the Greek geographers does not undermine the application of the

---

Sastri (1958) 26, Parker (2009) 89, Peacock and Blue (2007) 4, Puskás (1987) 143, Sedlar (1980) 85, Seland (2012) 81, Tomber (2009) 168-9, Wendrich *et al.* (2003) 71, Whitehouse (1991) 218.

<sup>181</sup> Choksy (2013).

<sup>182</sup> Kominko (2008) 145-6, 153.

<sup>183</sup> Strabo *Geography* Book 17 (on Arabia and east Africa), for example, includes details of plants (chapter 1.15, 1.51) and animals (chapter 1.39, 2.2, 2.4) alongside his geographical and largely cultural and historical information.

method. Indeed, the pattern of information gathering for Book Eleven, which seems to be an eclectic mix of personal observation, unacknowledged use of other written sources and the accounts of travellers, conforms to the pattern for compiling geographical works in the classical tradition.<sup>184</sup> Two pieces of evidence from Book Eleven of the *Christian Topography* strongly suggest this method.

The first indication comes from a spatial investigation of the plants and animals of India. The place of origin of and the purpose attributed by the author to the Indian plants and animals chosen implies the gathering of knowledge from various sources. The listed items are, in order: rhinoceros, buffalo, giraffe, yak, musk deer, unicorn, wild pig, hippopotamus, pepper, Indian nut (possibly coconut), and the seal, dolphin and turtle (illustrated and described as a group of three). Of these the author claims to have had personal experience of the following: rhinoceros,<sup>185</sup> buffalo,<sup>186</sup> giraffe,<sup>187</sup> unicorn,<sup>188</sup> wild

---

<sup>184</sup> Strabo (also Book 17) demonstrates the eclectic use of authorities common to classical geographical writing. This includes the use of recognised figures of antiquity, such as Eratosthenes (chapter 1.1) and Plato (1.4), the supplementing or revising of ancient knowledge on the basis of the accounts of travellers and hunters (chapter 1.5), reference to many unnamed sources sufficient to regard an account as a common knowledge (chapter 1.5) and use of personal observation (chapter 1.24). Certain authorities are also dismissed (chapter 2.1); pygmies are considered not to have been attested by any man ‘worthy of belief’. The majority of factual statements are not attributed to any authority and presumably were derived from a synthesis of written and oral sources.

<sup>185</sup> Seen by the author in Ethiopia: ‘Τεθέαμαι δὲ καὶ ζῶντα ἐν τῇ Αἰθιοπία’ (‘I have seen this animal in Ethiopia’).

<sup>186</sup> Eaten by the author: ‘Ἄμα δὲ καὶ τὸ κρέας ἐσθίομεν’ (‘I have also eaten this animal’). This creature is also described as being found in India and Ethiopia so where the author had his personal experience is unclear (‘Τοῦτο τὸ ζῷον ὁ ταυρέλαφος καὶ ἐν τῇ Ἰνδία καὶ ἐν τῇ Αἰθιοπία εὐρίσκεται’ – ‘This animal is the buffalo and it is found in India and in Ethiopia’).

<sup>187</sup> Seen by the author in the emperor’s collection, though it is also specified as being found only in Ethiopia: ‘Ἡ δὲ καμηλοπάρδαλις ἐν τῇ Αἰθιοπία μόνῃ εὐρίσκεται... Καὶ ταῦτα ὡς οἶδαμεν διεγράψαμεν.’ (‘The giraffe is only found in Ethiopia... and these as I saw them, I drew them’).

<sup>188</sup> Not seen by the author but its story is associated with Ethiopia and he claims to have seen an image of it there: ‘Τοῦτο τὸ ζῷον καλεῖται μονόκερος. Οὐκ ἔθεασάμην δὲ αὐτό· στήλας δὲ αὐτοῦ χαλκᾶς ἀνατιθεμένας ἐν Αἰθιοπία ἐν οἴκῳ τετραπύργῳ βασιλικῷ τέσσαρας ἑώρακα, διὸ καὶ οὕτως κατέγραψα.’ (‘This animal is called a unicorn. I have not seen it but in Ethiopia in the home of the king with four gates I have seen four statues of them made of bronze, from which I have drawn’).

pig,<sup>189</sup> hippopotamus,<sup>190</sup> seal, dolphin and turtle.<sup>191</sup> The plants and other animals are described and illustrated but no personal witness is referenced and instead expressions such as ‘they say’ are used.<sup>192</sup> This pattern of personal witness lends some support to the claim that the author may never personally have travelled further than Ethiopia, since all of the examples he claims to have seen can be found in there.<sup>193</sup> It is particularly striking, however, that the only two animals not personally seen by the author come not just from the Indian subcontinent, but specifically from the north of India in the Himalayas. This book is clearly described as ‘Καταγραφή περὶ ζώων ἰνδικῶν καὶ περὶ δένδρων ἰνδικῶν καὶ περὶ τῆς Ταπροβάνης νήσου’ (= a record of the animals of India and the trees of India and the island of Taprobane) and appears to mean by India anything south and east of the Egyptian Red Sea coast. For understanding the construction of the work (rather than just the author’s personal itinerary) it is relevant to consider that the yak and the musk deer are not separated by order or described as coming from a different region. Rather, the different Indian products are described in no particular order and apparently on the basis of a combination of personal experience and collated data from unspecified oral sources.

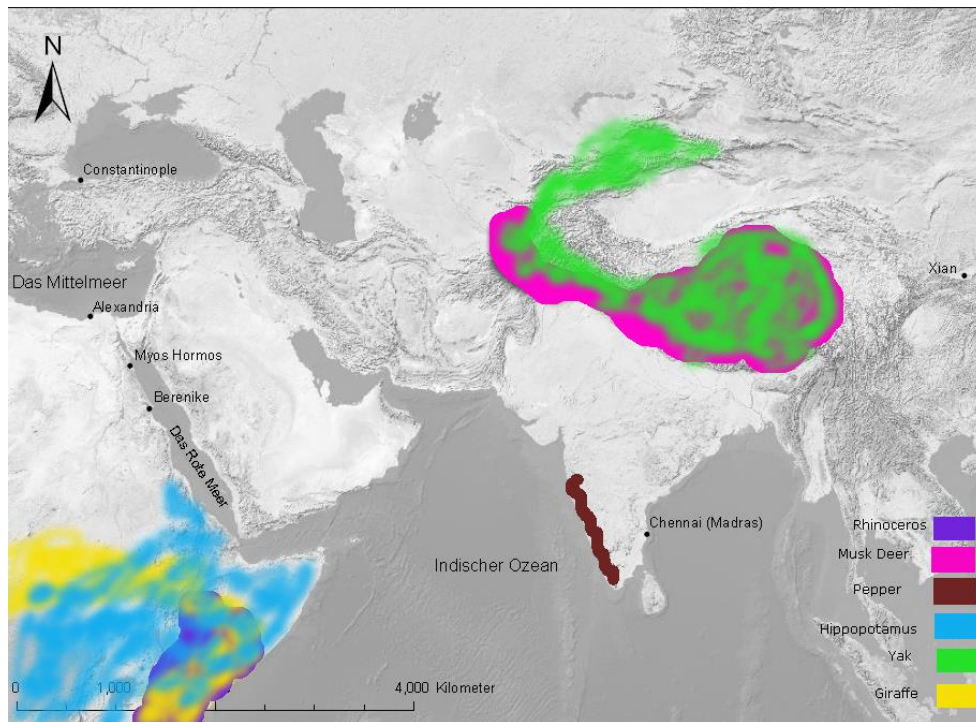
<sup>189</sup> Seen and eaten by the author: ‘Τὸν δὲ χοιρέλαφον καὶ εἶδον καὶ ἔφαγον’ (‘The wild pig I have both seen and eaten’).

<sup>190</sup> Not seen by the author but he has personally seen its teeth. He also adds that he has seen many [teeth] in Egypt and Ethiopia: ‘Τὸν δὲ ἵπποπόταμον οὐκ εἶδον μὲν, ἔσχον δὲ ὀδόντας ἐξ αὐτοῦ μεγάλους ὡς ἀπὸ λιτρῶν δεκατριῶν, οὓς καὶ πέπρακα ἐνταῦθα· πολλοὺς δὲ εἶδον καὶ ἐν τῇ Αἰθιοπία καὶ ἐν τῇ Αἰγύπτῳ’ (‘I have not seen the hippopotamus, but I have held huge teeth from it, of thirteen *litron*, and I have sold them here. I have also seen many [teeth] in Ethiopia and in Egypt’).

<sup>191</sup> All eaten by the author: ‘Φώκην τὴν λεγομένην καὶ τὸν δελφῖνα καὶ χελώνην ἦν ἐσθίμεν κατὰ θάλατταν, εἰ τύχοι πιασθῆναι. Τὸν μὲν δελφῖνα καὶ τὴν χελώνην σφράζοντες ἐσθίμεν, τὴν δὲ φώκην οὐ σφράζοντες, ἀλλὰ κοτραφίζοντες, ὡς ἐπὶ τῶν ἰχθύων τῶν μεγάλων. Καὶ τὸ μὲν κρέας τῆς χελώνης, ὡς προβάτου, ἐστὶ μελαμψόν· τὸ δὲ τοῦ δελφίνου, ὡς χοίρου, μελαμψόν δὲ καὶ βρομῶδες· τὸ δὲ τῆς φώκης, ὡς χοίρου, λευκὸν καὶ ἄβρομον’ (‘This called a seal, and the dolphin and the turtle we eat from the sea, if we happen to catch them. The dolphin and the turtle we eat after slaying (eviscerating?), the seal we do not slay (eviscerate?) but knock on the head (?), as if it were a big fish. And the flesh of the turtle, like beef, is dark; that of the dolphin, like pork, is dark and strong; that is the seal, like pork, is white and without odour’).

<sup>192</sup> It is said of the yak (Book Eleven, 5) that ‘Φασὶ δὲ περὶ αὐτοῦ ὅτι...’ (‘It is said concerning this, that...’).

<sup>193</sup> Though he does not claim to have seen one, this is also true of the unicorn, which the author claims is known to live in the region of Ethiopia.



**Fig. 3.1:** Map showing the origin of the rhinoceros, musk deer, hippopotamus, yak and giraffe, along with black pepper. The widely dispersed geographical distribution of these items is not clear from the author's descriptions, suggesting a lack of clear awareness on his part of their distinct regions of origin. All of those marked as originating in east Africa are also described by the author as having been seen (or otherwise witnessed) personally.

The other feature of Book Eleven which strongly supports the argument that it was put together in the style of classical geographical writing is the story of Sopatros, a friend of the author, who supposedly travelled to Sri Lanka, encountered its king and engaged in a discussion about the relative merits of Roman and Persian coinage. This passage is sufficiently important and famous within Indo-Roman studies as to be worth quoting in full:

Ποτὲ γοῦν τις ἀπὸ τῶν ἐνταῦθα πραγματευομένων ὀνόματι Σώπατρος, ὃν ἴσμεν πρὸ τριάκοντα πέντε ἐτῶν τελευτήσαντα, εἰσελθὼν ἐν τῇ Ταπροβάνη νήσῳ πραγματείας ἔνεκα ἔτυχε καὶ ἀπὸ Περσίδος ὀρμηῆσαι πλοῖον. Κατήλθον οὖν οἱ ἀπὸ Ἀδούλης, μεθ' ὧν ἦν ὁ Σώπατρος, κατήλθον καὶ οἱ ἀπὸ Περσίδος, μεθ' ὧν ἦν καὶ πρεσβύτες Περσῶν. Εἶτα κατὰ τὸ ἔθος οἱ ἄρχοντες καὶ οἱ τελῶναι δεξάμενοι

τούτους ἀποφέρουσι πρὸς τὸν βασιλέα. Ὁ δὲ βασιλεὺς δεξάμενος καὶ προσκυνηθεὶς κελεύει αὐτοὺς καθεσθῆναι· εἶτα ἐρωτᾷ· Πῶς αἱ χῶραι ὑμῶν καὶ πῶς τὰ πράγματα; Οἱ δὲ εἶπον· Καλῶς· εἶτα ὡς ἐν τῷ μεταξύ ἠρώτησεν ὁ βασιλεὺς· Ποῖος τῶν βασιλέων ὑμῶν μαιζότερος καὶ δυνατώτερος; Ὁ δὲ Πέρσης ἀρπάσας τὸν λόγον ἔφη· Ὁ ἡμετέρος καὶ δυνατώτερος καὶ μαιζότερος καὶ πλουσιώτερος καὶ βασιλεὺς βασιλέων ἐστί· καὶ εἴ τι θέλει δύναται. Ὁ δὲ Σώπατρος ἐσιώπα. Εἶτα φησὶν ὁ βασιλεὺς· Σύ, Ῥωμεῦ, οὐδὲν λαλεῖς; Ὁ δὲ Σώπατρος· Τί ἔχω εἰπεῖν, τούτου ταῦτα εἰπόντος; Εἰ θέλεις μαθεῖν τὴν ἀλήθειαν, ἔχεις ἀμφοτέρους τοὺς βασιλέας ἐνταῦθα· κατανόησον ἐκάστω καὶ ὄρᾳ ποῖος λαμπρότερος καὶ δυνατώτερός ἐστιν. Ἐκεῖνος ἀκοῦσας ἐξενίσθη λέγων· Πῶς ἔχω τοὺς ἀμφοτέρους βασιλέας ἐνταῦθα; Ὁ δὲ εἶπεν· Ἐχεις ἀμφοτέρον τὰς μονίτας, τοῦ μὲν τὸ νόμισμα, τοῦ δὲ τὴν δραχμὴν, τουτέστι τὸ μιλιάρισιν· κατανόησον τῇ εἰκόνι ἐκάστου καὶ ὄρᾳ τὴν ἀλήθειαν. Ὁ δὲ ἐπαινέσας καὶ ἐπινεύσας ἐκέλευσεν ἐνεχθῆναι ἀμφοτέρα. Ἦν οὖν τὸ νόμισμα ὄβρυζον, λαμπρόν, εὖμορφον· τοιαῦτα γὰρ ἐκλεκτὰ προχωροῦσιν ἐκεῖ· ἦν δὲ καὶ τὸ μιλιάρισιν, ἅπαξ εἰπεῖν, ἄργυρος, καὶ ἀρκεῖ μὴ συγκρινόμενος τῷ χρυσίῳ. Στρέψας δὲ ὁ βασιλεὺς καὶ ἀντιστρέψας καὶ κατανοῶν ἀμφοτέρα, ἐπαινέσας πάνυ τὸ νόμισμα, ἔφην· Ὄντως οἱ Ῥωμεῖς καὶ λαμπροὶ καὶ δυνατοὶ καὶ φρόνιμοι. Ἐκέλευσεν οὖν τὸν Σώπατρον τιμηθῆναι μεγάλως, καὶ καθίσας αὐτὸν εἰς ἐλέφαντα μετὰ τυμπάνων τὴν πόλιν περιῆγεν ἐν τιμῇ πολλῇ. Ταῦτα ὁ Σώπατρος ἡμῖν διηγήσατο, καὶ οἱ μετ' αὐτοῦ ὄντες ἐν τῇ νήσῳ ἐκείνῃ ἀπὸ Ἀδούλης ἀπελθόντες.<sup>194</sup>

The narrative has been used to argue forcefully for the importance of Sri Lanka in trade networks by the sixth century, a role entirely unsupported by any other numismatic, textual or archaeological evidence, and for the circulation of Roman and Persian currency in the

<sup>194</sup> Book Eleven, 17-20, ‘When, anyway, a certain man from here, a businessman by the name of Sopatros, who I know died 35 years ago, went to the island of Taprobane on business, there happened that another ship from Persia made anchor there. They therefore went from Adulis, with Sopatros with them, and the others from Persia; with them was also a Persian presbyter. Then, according to the custom of the ruler, the farmers carried them before the king. The king, having received proskynesis, urged them to be seated. Then he asked, “What are your places, and what is your business?” They said, “Good,” then when they were in the middle, the emperor asked, “Which of your kings is the greater and more powerful?” The Persian seized the word, saying “Our king is more powerful, greater and richer, the king of kings: whatever he wants is possible.” Sopatros was silent. Then the king said, “You, Roman, why do you not speak?” Sopatros replied, “What have I to say of the things this one has said? If you want to study the truth, you have both the kings here. Observe each well and you will see which is brighter and more powerful.” That one received what he heard, saying, “How are both kings here?” He said “You have the money of both, the *solidus* of the one and the *drachma* of the other, that is, the *miliaresion*. Observe the images on both and you will see the truth. He, approving, gathered and urged them both to be brought. Then the *solidus* indeed was pure, bright, well-formed; for these ones, having been chosen, go there. And indeed the *miliaresion*, to say once and for all, was silver and not to be compared with the gold. Turning the king over and both over again he knew well, applauding the *solidus*; he said “The Romans are bright and powerful and sensible. Then he urged Sopatros to be greatly honoured and seating him on an elephant with drums, he led him into the city with great honour. These things Sopatros described in detail to me, and those with him on that island travelling from Adulis’.

east.<sup>195</sup> It is an account which bears striking similarities to Pliny's first-century account of the freedman of Plocamus:

Anni Plocami, qui Maris Rubri vectigal a fisco redemerat, libertus circa Arabiam navigans aquilonibus raptus praeter Carmaniam, XV die Hippuros portum eius invectus, hospitali regis clementia sex mensum tempore inbutus adloquio percontanti postea narravit Romanos et Caesarem. Mirum in modum in auditis iustitiam ille suspexit, quod parvis pondere denarii essent in captiva pecunia, cum diversae imagines indicarent a pluribus factos.<sup>196</sup>

It is curious that many studies of Indo-Roman trade cite the *Christian Topography* without referencing this textual overlap. When comparison is drawn, efforts are often made to explain similarities in a manner which maintain both as objective sources for economic reality rather than reflections of a shared literary genre, even suggesting that the stories are similar because they must have described a commonly occurring scenario.<sup>197</sup> While both may reflect realities of contemporaneous trade, the closeness of the stories and their specific reference to royal courts and monetary comparison suggests the importance of literary models. It has already been established that the author of the *Topography* was widely read in the classical works of geography and natural science he sought to repudiate, and it is thus possible – indeed likely – that he simply re-used the account.

---

<sup>195</sup> Boppearachchi (2006a) 193, De Romanis (1997) 187-8. On the lack of material evidence for ancient Lankan trade connections beyond India, see Darley (forthcoming).

<sup>196</sup> Pliny *Natural History* Book 6, chapter 24.84-5 'Annius Plocamus had obtained a contract from the Treasury to collect the taxes from the Red Sea; a freedman of his while sailing round Arabia was carried by gales from the north beyond the coast of Carmania, and after a fortnight made the harbour of Hippuri in Ceylon, where he was entertained with kindly hospitality by the king, and in a period of six months acquired a thorough knowledge of the language; and afterwards in reply to the king's enquiries he gave him an account of the Romans and their emperor. The king among all that he heard was remarkably struck with admiration for Roman honesty, on the ground that among the money found on the captive the denarii were all equal in weight, although the various figures on them showed that they had been coined by several emperors.' (trans. H. Rackham 1942).

<sup>197</sup> De Romanis (1997) compares the two accounts most closely but does so on the basis of both reflecting largely unmediated occurrences on the island. He claims (180-3) that the account by Pliny reflects the reality of needing to check coins for their weight and is openly dismissive (187-8) of those who would question the tale of Sopatros as a worn out traveller's tale on the grounds that, he claims, the story reflects the author of the *Topography*'s realization of the growing presence of Persia in the Indian Ocean (though this is itself is not well demonstrated).

Taking Book Eleven as a part of the whole *Christian Topography* further supports the contention that the work was created within the tradition of classical geography and that Book Eleven was added for a reason other than shared authorship. Even if it was originally composed as part of a different work and added to the *Christian Topography* later it seems to have been perceived as adding to the other ten books. Rather than its usual treatment as disconnected and entirely peripheral, Book Eleven can instead be read as providing empirical evidence for the edges of the theoretically bounded world the author describes. Scripture and observation form the basis of the core argument of the *Topography* and this entails a world which literally has edges.



**Fig. 3.2:** *Image of the world according to the author of the Christian Topography.*<sup>198</sup>

---

<sup>198</sup> From the Sinai (K) manuscript (Codex Sinaiticus graecus 1186) fol. 66v, reproduced from <http://archiv.ub.uni-heidelberg.de/ojs/index.php/transcultural/article/view/6127/2962> (accessed 20/06/2013).

In this context, the author's account of plants and animals of India and the exotic island of Taprobane, which all lie in his geography at the outer reaches of real space, provide a concrete impression of distance and limits. Parker has demonstrated that the Roman view of India was exoticising; India functioned as 'other' in a way which would have supported the author of the *Topography's* finite vision of the limits of the world.<sup>199</sup> The use of empirical, personal experience to verify these symbols of 'outerness' further appears to strengthen the author's claims to authority in making his larger theological arguments.<sup>200</sup> In this context, the use of ingestion as a measure of experience seems significant. On five occasions, the author 'proves' his account by stating that he has eaten the animal described.<sup>201</sup> Such a personal claim to authority, with its possible link in the highly theological context of the *Topography* to the experience of the divine through consumption in the Eucharist seems calculated to reinforce the author's role as arbiter of a Christian worldview.

Viewing Book Eleven as an intentional part of the *Christian Topography* and the whole as a geographical work has important implications for Byzantine literary and Indian

---

<sup>199</sup> Parker (2011) 4.

<sup>200</sup> Clark (2008) 32, 71 argues strongly that the author of the *Topography* rejected empiricism in favour of revelation. While undoubtedly revelation as found in scripture was the primary authority for the author's worldview, it is not clear that he entirely rejected the authority of autopsy, especially in Book Eleven, with which Clark barely engages. On no fewer than seven occasions (in sections 2, 3, 4, 7, 8, 9 and 12) the author makes reference to personally witnessing the animal described or some other evidence for its existence and characteristics, such as its teeth (9) or a stone carving of it (7). Elsewhere in the *Topography*, however, the author also uses the authority of personal witness to introduce his account. In Book Two (56), for example, the description of the *stela* of Aksum is introduced with the following: 'Λαβόντες δὲ δεδώκαμεν τῷ ἄρχοντι, κατασχόντες ἑαυτοῖς τὰ ἴσα, ἃ καὶ νῦν θήσω ἐν ταύτῃ τῇ συγγραφῇ, συμβαλλόμενα ἡμῖν πρὸς τὴν τῶν τόπων καὶ τῶν οἰκούντων καὶ τῶν διαστημάτων εἰδήσιν.' ('Having made a copy we handed it to the governor, keeping our own version, and now I will put it in this record, to contribute to our knowledge of the places and the people and the distances.')

<sup>201</sup> Of the buffalo (ταυρέλαφος) the author comments that "Ἄμα δὲ καὶ τὸ κρέας ἐσθίομεν, οἱ μὲν χριστιανοὶ σφάζοντες, οἱ δὲ Ἕλληνες κοτραφίζοντες" ('We eat the flesh together; the Christians slaughter [them], the Greeks bleed [them]') (Book Eleven, 3). Book Eleven, 8 records of the wild pig that "Τὸν δὲ χοιρέλαφον καὶ εἶδον καὶ ἔφαγον" ('I have both seen and eaten the wild pig'). In Book Eleven, chapter 12 seals, dolphins and turtles are all described primarily in terms of their different culinary qualities (see note 191 above).



Ocean studies. As a work of Byzantine literature, Book Eleven needs to be considered more closely in manuscript studies of the *Christian Topography* to explore its precise relationship with the other chapters of the work. In Indian Ocean studies examination of the work as a whole does not invalidate its usefulness as a source for trade networks but should problematize readings of the text which focus too heavily on it as an objective window into the sixth century.

The images in Book Eleven are also in need of consideration in relation to the rest of the text. The sheer brevity of the text accompanying the images makes them perhaps the most necessary and integral figures anywhere in the text. In places descriptions are so brief that had a reader not already known the name of the plant or animal described, no understanding of its form or identity could have been gleaned from the explanatory text.<sup>202</sup> The accuracy of the surviving images (defined as accurate adherence to the original images created by or for the author to accompany the text) has generally been argued on the basis of their consistency across the two different recensions. In practice, such convictions are based almost exclusively upon the cosmographic images and, to a lesser, extent, the biblical cycles, rather than Book Eleven.<sup>203</sup>

Consideration specifically of Book Eleven, however, suggests that the images must be treated more cautiously. The images in Book Eleven are principally thought to be

---

<sup>202</sup> The most abbreviated description is certainly that of the wild pig (Book Eleven, 8): ‘Τὸν δὲ χοιρέλαφον καὶ εἶδον καὶ ἔφαγον’ (‘This is the wild pig and I have both seen and eaten it’) but the description of the hippopotamus (Book Eleven, 9) also seems to assume either some knowledge of the animal or that the picture will supply necessary anatomical details, since the only aspect of its appearance discussed is its teeth (see note 190 above). The description of the sea animals in Book Eleven, 12 (see note 191) is equally lacking in description of the physical appearance of the creatures, presumably relying on the images to supply this information.

<sup>203</sup> Kominko (2008) 141-2.

accurate renditions of the author's originals because of the assumed accuracy of other images in the *Topography*. This is problematic for several reasons. First, it continues to locate Book Eleven in a liminal space in which it may be regarded as connected to the rest of the *Topography* or not to suit each new argument: its images may be interpreted within the context of the text as a whole but the text is not considered as part of the theological argument. Second, accuracy as defined above (adherence to the original illustration of the text) is then in the case of book eleven subsequently (and silently) mutated into accuracy defined as a quasi-photographic representation of the objects depicted, which is in turn used to support identifications of real-world zoological or botanical specimens.<sup>204</sup>

Finally, the basis for asserting the consistency of images in the *Christian Topography* with images originally created for the text comes from their similarity across the V, L and S recensions. Since these appear to have been created quite separately yet demonstrate clear commonalities it can be argued that the images were copies of originals with identifiable features. In the case of Book Eleven, however, the text and images only survive in the linked L and S manuscripts and so cannot be verified against a parallel version. This, combined with recent evidence demonstrating how much images derived from a common source could change in transmission even within copies of manuscripts which preserved accompanying text highly accurately, suggests that extreme caution should be used when citing the images accompanying Book Eleven of the *Topography* as evidence for sixth-century affairs or the botanical and zoological goods of trade between

---

<sup>204</sup> Cappers (2006) 78, for example, uses the depiction of coconuts being harvested in the manuscript of the *Christian Topography* to support his botanical evidence for the movement of coconuts to Egypt in Late Antiquity, without engaging with the question of how an image could or could not be transmitted accurately even if (as Cappers avers) the author had personally travelled far enough east to see coconuts being harvested.

India, Sri Lanka and east Africa.<sup>205</sup> It is not demonstrable in the case of Book Eleven that the images currently surviving were probably consistent with images which may have accompanied the author's original text in the sixth century. Even if such consistency were provable, however, it would not in any case constitute grounds for assuming that the images depict recognisable specimens of flora and fauna.

### **3.3 The *Periplous of the Erythreian Sea***

The text known as the *Periplous of the Erythreian Sea* bears comparison with the *Christian Topography* with respect to its creation and to its transmission and study. In Indian Ocean studies it is perhaps the most significant piece of evidence available and is used consequently with an optimism which often obscures how little is known about its creation and authorship. The question of genre presents similar problems to those explored above in the case of the *Christian Topography*. Those of authorial purpose and identity are far more complicated. Unlike the *Christian Topography* with its two strands of scholarship, in Byzantine manuscript studies and in Indian Ocean studies, the *Periplous of the Erythreian Sea* has received almost no attention outside the realm of the latter.

Presenting an account of the voyage from the Red Sea port of Myos Hormos to the west coast of India and the Swahili coast of east Africa, the 66-section text describes seaborne travel in terms of ports visited, distances between stops, the goods traded and ethnographic, sometimes faunal, and topographical features of the places visited. The term 'Erythreian Sea' referred in Roman texts to the Red Sea but often encompassed much of

---

<sup>205</sup> Baumgärtner (2002) demonstrates using eleventh to thirteenth century manuscripts known to share a common source, and which preserved the text accurately to demonstrate the level of fluidity which characterised the reproduction of accompanying images (in this case maps).

the Arabian Sea and the Indian Ocean as far as the western shores of India.<sup>206</sup> Unlike the *Christian Topography*, no information about the author is provided within the text, though his use of first-person plural forms, or the advice to a second-person singular reader, to describe some sections of the journey suggests that he himself engaged in the trade routes described.<sup>207</sup>

The text survives in two manuscripts, currently located in Heidelberg and London. The title, *The Periplus of the Erythreian Sea* (Περίπλους τῆς Ἐρυθραίας θαλάσσης) appears in both. It is often referred to by the Latin translation of this title (*Periplus Maris Erythraei*) and consequently cited as PME or simply the *Periplus*<sup>208</sup> in much of the secondary literature. The Heidelberg manuscript is the earliest of the two surviving copies, probably dating from the late ninth century as part of a collection of geographical and wonder texts.<sup>209</sup> The London manuscript, housed in the British Library (Add. MS 1939I, fols. 9r-12r), dates from the fourteenth or fifteenth century and appears to be a direct copy from the Heidelberg text.<sup>210</sup> The British Library edition has received little or no scholarly attention (for example, to its marginal notes), all of which has been focussed on the Heidelberg copy as the earliest and ‘original’ version.<sup>211</sup> Based on markers within the text, the date of writing most widely agreed upon is *c.* A.D. 40-70.<sup>212</sup>

---

<sup>206</sup> Strabo’s *Geography* considers the lower part of the Red Sea and the entire body of water between the east coast of Africa and the west coast of India to be the Erythreian Sea, minus the Persian Gulf. As Mayerson (1993) points out, by the fourth century considerable confusion existed over the term ‘India’, which could encompass Ethiopia, the Arabian Peninsula or sub-continental India.

<sup>207</sup> *Periplus* chapter 20, chapter 34, chapter 43.

<sup>208</sup> Most bizarrely, even sometimes referred to as PME in cases where the Latin translation of the Greek title is never mentioned and the acronym therefore makes no sense whatsoever, further obfuscating discussion of this text, for example Parker (2001).

<sup>209</sup> Available to view online: <http://digi.ub.uni-heidelberg.de/diglit/cpgraec398> (accessed 04/10/2012).

<sup>210</sup> Casson (1989) 5, though Mathew (1975) 150-2 presents the case for there having been a lost ‘B copy’ between the two versions. Codex Palatinus Graecus 398, fols 40v-54v (Universitäts Bibliothek, Heidelberg)

<sup>211</sup> Mathew (1975) has offered some commentary on the British Library edition, demonstrating that it may have been copied before many of the marginal notes in the Heidelberg manuscript (151-2), but Freeman-

The 1989 release of an English-language critical edition opened this text more broadly to scholars working on the history of Indian Ocean trade but there had already been significant discussion on the subject of the dating, purpose and meaning of the text and translations into Latin, German, French and English.<sup>213</sup> Since the 1980s the text has

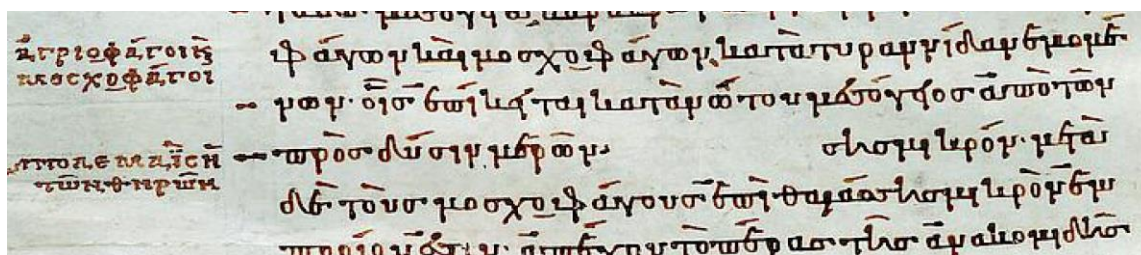
---

Grenville (1990, 127) points out the lamentable failure of the most recent and generally the best critical edition – Casson (1989) – to engage in any way with the British Library manuscript.

<sup>212</sup> This is derived primarily from a reference in the text to 'Malichas, the king of the Nabataeans'. (19:6,28-29 [δι' ἧς ἐστὶν εἰς Πέτραν πρὸς Μαλίχαν, βασιλέα Ναβαταίων <ἀνάβασις>]). Casson makes the point that '[t]he word "Nabataeans" is a restoration, but that is of little import: a king in Petra can only be a king of the Nabataeans' (1989, 7). For a full discussion of the various debates over the date of the text see Dihle (1965) 9-35 and Raschke (1978) 979-980 for a bibliography of the debate, which has died down considerably in recent decades. According to reconstructions of Nabataean regnal sequences this provides one possible and two certain candidates by the name of Malichus (Bowersock (1971) 223-5). Of these, one is too early and the other fits the A.D. 40-70 date. A third Malichus has been proposed for insertion in the third century in support of a later date for the text, but this has been widely criticised and rejected (Dihle (1965) 13, Bowersock (1971) 223-5). Further but equivocal support is given to a mid-first century date by a reference to an Indian ruler, Manbanos, in paragraph 41 of the text. This ruler is now largely agreed to be the Andhra ruler Nahapana. Nahapana's dates are, however, contested and thus it becomes a slightly circular argument as to whether the *Periplus* can be used to date Nahapana or Nahapana the *Periplus*. Certainly the best overlap between the text, Nabataean regnal lists and the possible window for Nahapana's reign lies in the decades A.D. 40-70. Cribb (1992) for a summary of the debate including numismatic arguments in favour of identifying Manbanos as Nahapana. The suggestion of a third century date derives primarily from the contention that since neither Pliny's *Natural History* (completed pre A.D. 79) nor Ptolemy's *Geography* (completed in the second century A.D.) are mentioned in the *Periplus*, nor does either text mention it, its composition must post-date these texts. This argument has, however, failed to find much support. Graf (1994) 144-5 gives the best summary of the reasons why the *Periplus* has been considered later than or contemporaneous with Pliny but earlier than Ptolemy. This argument, based on accuracy of knowledge, especially about the coasts of India (comparable in the *Periplus* and Pliny) and China (better in Ptolemy) assumes that knowledge was disseminated in Roman society in a linear model of expansion and improvement – a hypothesis open to serious question – but has contributed to debate over the date of the text. It has also been pointed out (for example, by Ray (1986) 7) that Pliny and the author of the *Periplus* appear to have occupied different circles, or at least to have had different levels of education and thus, even if contemporaneous, there is no reason why either should have known about the work of the other or felt compelled to cite it. Closely related to the proposed third-century date is the theory that the text is a composite work completed in the third century but compiled from material dating from the first century onwards (Palmer (1947) 140.). This has been firmly rejected on the basis that the text appears to have a consistent authorial voice throughout (Casson (1989) 7).

<sup>213</sup> The text first appeared in Epherino Medico (1533) when it was published alongside Arrian's *Periplus of the Euxine Sea* as a minor work of the same author. This first edition suffered from major errors owing to the editor's lack of familiarity with the material. However, during the Thirty Years War the manuscript was removed from Heidelberg, taken to Rome, later removed to Paris by Napoleon and only restored to Heidelberg in 1816. Thus until its restoration to Heidelberg all further editions or discussion of the text relied entirely on the 1533 publication (Schoff (1912) 17-19 includes a list of all early editions of the text, which included Latin, Italian, modern Greek, German and English editions). The first critical edition, however, was by Müller (1855). This consisted of a carefully corrected version of the Heidelberg manuscript (now available for study), alongside a Latin translation, with discussion and notes, including a brief history of the Parisian peregrination of the manuscript before its return to Heidelberg, and a list of the included texts (xvi-xvii). In 1879 McCrindle published the first English translation based on Müller but without the accompanying Greek text. The translation was rather free but, working in India at the time of writing, McCrindle's notes provide valuable information, especially concerning the coast of India and some ethnographic information. The next critical edition to emerge was that of Fabricius in 1883, which Casson

become the subject of yet more extensive study and a further translation into Italian.<sup>214</sup> It is a complex text since the manuscript suffers from multiple scribal errors and efforts by the scribe to render familiar (or replace) alien terms. Where even this seemed impossible, the defeated copyist simply left gaps.<sup>215</sup>



**Fig. 3.3:** Gap left by scribe in the Heidelberg copy of the Periplus of the Erythrean Sea (f. 40 v.).

While studies of the text have been extensive and its use in scholarship on the subject of Mediterranean trade with the Indian Ocean in the pre-modern period has been almost ubiquitous, it has never received attention purely as a piece of writing or been subject to a critical review of its genre or authorial intent. Instead, the identity of the author and the aim of the text have been assumed to be clear from the title ‘*Periplus*’ and the

---

condemned as displaying ‘a total disregard for the readings of the manuscript’ (1989, 6) but which nevertheless came to be widely used. This was re-printed in 1883 with fuller notes, a German translation and an introduction by Dietrich. In 1912 the next major English translation of the work was released by Schoff, who was again rather free in his translation and did not include the Greek text. In 1927 Frisk published *Le Périple de la Mer Erythrée*, with full Greek text and notes. This edition of the Greek text is generally considered to be the best of the early publications and became sufficiently standard as a reference that Casson chose to keep the numbering in his 1989 edition consistent with Frisk (Casson (1989) xvii). No replacement of Frisk’s edition was attempted until 1980 when Huntingford released an English translation and critical edition. This included valuable scholarly notes, including an examination of the manuscript tradition (12-13). The current standard edition is that of Casson (1989), which includes an English translation of the text alongside the Greek text, and full notes and discussion. In 2004 Belfiore produced an Italian critical edition and translation, which included useful discussion and also reproduced the *Parthian Stations of Isidore of Charax* and the P.Vindob. G 40822 papyrus dealing with Indo-Roman trade.

<sup>214</sup> The most important English translation and critical edition: Casson (1989). Casson has contributed extensively to a fuller understanding of the text. For example: Casson (1980a, 1980b, 1982a, 1982b, 1983a, 1983b, 1984, 1986b, 1987). For the Italian edition: Belfiore (2004). Other contributions to elucidating elements of the text include: Abdullah (1995), Chami (1996), Fussman (1997), Gogte (1999, 2004), Groom (1995), Horton (1990), Robin (1997), Salles (1995), Seland (2005, 2008, 2010), Young (1997).

<sup>215</sup> Casson (1989) 5-6.

style in which it is written. In the introduction to the 1989 critical edition Casson stated that '[the author] seems to have been a merchant who, after sailing the routes the *Periplus* describes and trading in the products it lists, decided to write a handbook on the subject',<sup>216</sup> but this had already become the standard explanation for the text's creation by the late nineteenth century. Müller's 1855 edition, the only one to place the document within the context of other texts in the Heidelberg manuscript (though only the geographical works) was interested in the text as evidence for the Greek love of geography and he did not speculate further on the motivation for its production than as a general symptom of the breadth of Greek learning and an indication of a human urge towards exploration:

E Græciæ litore lacinoso vel serenis Ioniæ plagis mare prospectans puer ardescit longinquarum terrarum desiderio et ex ore pendet diu vagati nautæ Carici; vir deinde, si ferat fortuna, audita properat suis usurpare oculis atque nova addere notis, ut redux tandem visa circumstanti recitet coronæ literisque condita tradat posteritati.

and

Et quum multiplex sit argumentum ac plerasque scientias humanas attingat, vix ullum Græcia studiorum curriculum inivit quin comitem se adjungeret geographia, quæ una logographos, sophistas, philosophos, historicos, rerum naturalium scrutatores, mathematicos, astronomos, nautas, mercatores, diversicolorem sane gentem, vastis suis spatiis exceptit.<sup>217</sup>

---

<sup>216</sup> Casson (1989) 8.

<sup>217</sup> Müller (1855) i, 'From the intricate Greek coast to the serene Ionian sea, a boy looking out blazes with longing for the far-off places of the world and before the eye by day hang the wandering sailors of Carici; a man then, if he is lucky hurries, having heard, to exercise his eyes, in order that, returning, he might having seen at length tell of the matters [and] for a literary crown might transmit his secrets to posterity'. And 'And of those, manifold is the subject and very many the human sciences he might come into contact with, [but] scarcely might he go into any Greek curriculum of study without adding geography to accompany it, [for] what speechwriter, sophist, philosopher, historian, observer of natural phenomena, mathematician, astronomer, sailor, merchant [or] sensible man of diverse interests might take his space to be empty?'

Many of the earlier editions demonstrated a similarly general interest in the text as a product of ancient/classical knowledge and geography, but other details began to be added to the picture. For example, Vincent entitled his 1800 edition *The Periplus of the Erythrean Sea, part the first, containing an account of the navigation of the ancients, from the sea of Suez to the coast of Zanguebar*, re-published by Vincent in 1807 as volume 2 of a work entitled *The commerce and navigation of the ancients in the Indian ocean*. This re-published edition seems to be the earliest work to associate the *Periplus* specifically with commerce (a not unreasonable association given the content of the text, it must be stressed).

Dietrich in his introduction to his own 1883 revision and translation of Fabricius' edition of the same year stated of the author:

Dass es aber ein in Aegypten, sei es in Alexandrien oder in Myos Hormos oder Berenike, lebender Kaufmann war, der diesen Periplus zum Nutzen der Indienfahrer schrieb und selbst die Reise, wenigstens grossentheils, unternommen hatte, wird Jeder, der die Schrift liest, eingestehen müssen.<sup>218</sup>

What has become the standard package of commonly accepted information about the author was here provided, fully-formed: that he was an Egyptian trader, who had undertaken the voyage described (or at least most of it), and was writing to inform other traders. Dietrich went on to state that

---

<sup>218</sup> Dietrich (1883) 23. 'It must, however, be acknowledged by everybody reading the text, that it was a merchant, living in Egypt, be it in Alexandria or in Myos Hormos or in Berenike, who wrote this periplus for the use of travelers to India and who had himself undertaken the journey, at least the majority of it.'



Er führt die ägyptischen Waaren an, dann die ägyptischen Monatsnamen neben den römischen, vergleicht andere Gegenden mit denen Aegyptens und nimmt wiederholt auf Aegypten Rücksicht.<sup>219</sup>

Curiously, even at this early stage, the plentiful evidence in the text for the Egyptian origin of the author was adduced, but none was offered for the conclusion that the text was produced to assist other traders. The presentation of this composite identity with extensive and convincing evidence offered for elements of it and none for others has continued to the most recent editions. Casson further emphasised the inequality of evidence by citing proof from the text for both the Egyptian origins and the practical experience of the author, while offering none for the conclusion that the text is a traders' manual or that the author is a merchant:

The author must have been an Egyptian Greek, for he refers at one point (29:9.27) to "the trees we have in Egypt" and he consistently gives the Egyptian equivalents of the Roman months (6:3.6, 14:5.8, 24:8.12, 39:13.13, 49:16.32, 56:18.29). He writes from personal experience, as is evident not only from the nature of his reporting, direct and detailed, but from a passage in which he reveals that he himself plied the route under discussion ("we set a course...we put on extra speed," 20:7.14-15)... // He seems to have been a merchant who, after sailing the routes the *Periplus* describes... [offered by Casson without any reference to supporting passages from the text].<sup>220</sup>

In recent scholarship this explanation for the text's creation has become sufficiently canonical as to require no citation at all. Seland, for example, provides no references for the statement that '[t]he work is a practical handbook for navigation and trade in the Indian Ocean'.<sup>221</sup>

<sup>219</sup> Dietrich (1883) 23. 'He referred to Egyptian wares, then to Egyptian months alongside Roman, he compares other regions with Egypt and reflects repeatedly on Egypt'.

<sup>220</sup> Casson (1989) 7-8.

<sup>221</sup> Seland (2005) 271.

Only one consistent challenge has hitherto been raised to the theory of the *Periplus* as a merchant's handbook. Mathew argued in 1975 that the text was in fact a Roman government report compiled for the benefit of the prefect of Egypt.<sup>222</sup> This view has gained little currency and was dismissed by Casson in the introduction of the critical edition as 'pure fantasy'.<sup>223</sup> Nevertheless, it would answer some important questions about the text, such as why it is so disproportionately interested in the acquisition of luxury (therefore taxable) goods, rather than geographical features or more mundane exchange.<sup>224</sup> It would help to explain why, although it appears to date from the mid first century A.D., the text is not cited by Pliny in his *Natural History*. This omission would be plausible if the report was either available to him as a private state document, or not available to him for the same reason. It has also been pointed out that the omission may best be explained by examination of the style of the *Periplus*, which is less polished than that of elite, literary works by Pliny and Ptolemy. There is no convincing reason to suppose that scholars such as Pliny and Ptolemy would have felt required to find, consult or cite a text such as the *Periplus* even if it had been available.<sup>225</sup> Mathew's theory would also explain why the identity of the author is so muted throughout the text. Above all, it answers the query raised by Freeman-Grenville in defence of Mathew's 'government report' thesis:

The suggestion is not quite as fantastic as Casson's own, that the author was a merchant writing a handbook for his fellow merchants. Any perusal of a company or corporation report, or of the Wall Street Journal, or of the Financial Times, both reputable journals of record, shows the extent to which certain matters are what is described as 'business confidential'...What merchant would disclose 'business

---

<sup>222</sup> Mathew (1975) 153-4.

<sup>223</sup> Casson (1989) 8 §18.

<sup>224</sup> Sidebotham (1990) 16, in which the author also points out the curious absence in the text of many non-luxury goods which are known from other sources and even from allusions in the *Periplus* to have been traded along the routes described in the text.

<sup>225</sup> Ray (1986) 7.

confidential' information to his competitors? Not likely, nor in the first century A.D.<sup>226</sup>

Clearly, however, the 'government report' theory has weaknesses of its own. To name the most obvious, import duties appear only once in the text, which might seem unexpected from a government agent. This reference is to a customs officer posted at Leuke Kome along with a detachment of soldiers to ensure that the 25% tax was imposed on goods entering the port: 'Διὸ καὶ παραφυλακῆς χάριν καὶ εἰς αὐτὴν παραλήπτῃς τῶν εἰσφερομένων φορτίων καὶ ἑκατοντάρχῃς μετὰ στρατεύματος ἀνοστελλέται.'<sup>227</sup> The precise purpose of this customs officer in a port not under Roman control has been speculated on somewhat convincingly by Young.<sup>228</sup> If, however, the *Periplus* were a government document, why would it report on official government postings and not, for example, on estimates of the value or volume of goods entering ports, on which the author is silent?

Strategic observations concerning the military capabilities and structures of foreign powers are similarly lacking. Comments about foreign potentates include the observation that the port of Rhapta was under Arabian control, in the person of a governor Mapharitis by 'ancient right': 'Νέμεται δὲ αὐτὴν, κατὰ τι δίκαιον ἀρχαῖον ὑποπίπτουσιν τῇ βασιλείᾳ τῆς πρώτης γενομένης Ἀραβίας, ὁ Μοφαρίτης τύραννος'.<sup>229</sup> The author also notes that Charibael, the king of the Sabaeans and the Homerites, is a friend of Rome because of embassies and gifts sent to him: 'Καὶ μετ' ἄλλας ἐννεὰ ἡμέρας <Σ>αφὰρ μητρόπολις, ἐν ἧ

<sup>226</sup> Freeman-Grenville (1990) 127

<sup>227</sup> *Periplus* chapter 19, line 31. 'For that reason, as a safeguard there is dispatched for duty in it a customs officer to deal with the (duty of a) fourth on incoming merchandise as well as a centurion with a detachment of soliders'.

<sup>228</sup> Young (1997).

<sup>229</sup> *Periplus* chapter 16, lines 8-9. 'The region is under the rule of the governor, Mapharitis, since by some ancient right it is subject to the kingdom of Arabia as first constituted'.

Χαριβαήλ, ἔνθεσμος βασιλεὺς ἔθνῶν δύο, τοῦ τε Ὀμηρίτου καὶ τοῦ παρακειμένου λεγομένου Σαβαίτου, συνεχέσι πρεσβείαις καὶ δώροις φίλος τῶν αὐτοκρατόπων.<sup>230</sup> Such observations can hardly be termed tactical, however, and as in the case of the customs officer at Leuke Kome, a government official reporting to the government on their own embassies to Charibael would seem slightly redundant. If the text is a government report, then the absence of any reference to its purpose within the text itself is at least as odd as in the case of it being a handbook for merchants which nevertheless contains no direct instructions, and the idea of the government sponsoring an agent to travel to India and back for the purpose of jotting notes on trade goods and the lifestyle of local peoples is, to say the least, unprecedented in the surviving canon of Roman literature.

While Mathew's argument may have overstated the case for the work being a government report, however, report writing remains a credible genre within which to place the text. The tradition of synthesising pre-existing information for easy acquisition of knowledge was well-developed in the Roman world and acquired from the Hellenistic tradition. From Herodotos' famous reference to multiple accounts of events, of which he selected the most true or summarised a selection, to Pliny's account of gathering information both from autopsy and authority for his natural history, to the opening of the text usually termed the *Periplous* of Marcian of Heraklea (see below) the ancient Hellenistic and Roman worlds embraced the production of shortened, synthesised sources of knowledge.<sup>231</sup> At a more mundane level than these texts, the papyri from late Roman Egypt also reveal a level of literacy and reporting of information which allows

---

<sup>230</sup> *Periplous* chapter 23. 'Nine days further inland is Saphar, the metropolis, residence of Charibael, legitimate king of the two nations, the Homerite and the one, lying next to it, called the Sabaeans; he is a friend of the emperors, thanks to continuous embassies and gifts'.

<sup>231</sup> Herodotos, *Histories* Book 1, chapters 5 and 95. Pliny, *Natural History* Book 1, chapter 1.18-19.

unparalleled access to the economic and social life of Roman Egypt. Papyri include reports of contracts, requests for goods and the assessment, payment and collection of tax levies.<sup>232</sup> The *Periplous of the Erythreian Sea* does not precisely match either category of text. It does not, unlike the works of literary synthesis mentioned above, either address its audience with its intention to inform, or give an account of its sources. Unlike the records of private and (more rarely) government record keeping from the Roman world, however, it has a substantial and composed tone. It uses full sentences throughout, includes descriptive passages and is longer than most report documents dealing with local matters of administration. It may bear some comparison with the reports written directly to emperor Trajan by Pliny the Younger in the late first to second centuries, which are of comparably substantive style but they also reflect an unusual level of direct correspondence with the emperor and are explicit to the point of obsequiousness about their purpose and audience.<sup>233</sup> It is certainly possible in the context of what is revealed by papyri about literacy in Roman Egypt and about the use of written reporting to keep track of business and administration, that the *Periplous* was commissioned (perhaps, though not demonstrably, by a businessman) to record what was then known about the trade routes to the east.

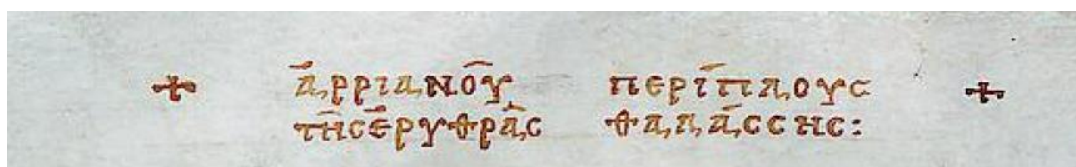
The question of genre is therefore crucial for any interpretation of the text, but it is one which has traditionally been muted by assumptions derived from the text's title. This title, the *Periplous of the Erythreian Sea*, was accorded the text by the scribe of the Heidelberg manuscript, but it is unclear how it or the attribution to Arrian which

---

<sup>232</sup> See for a sample Rea (1972, 1975, 1996).

<sup>233</sup> Pliny, *Letters* for example: 60-70.

accompanies the title relates to the document.<sup>234</sup> Both title and author may have been copied from an earlier version, and both may have been added by the ninth-century scribe. The attribution to Arrian has long been rejected by scholars. It is not included in the British Library copy, which includes no authorial information, and the text is considered to be an anonymous work.<sup>235</sup> It is curious, therefore, that although this feature of the manuscript title has been abandoned in the absence of supporting evidence within or outside the text, its designation as a *periplous* remains largely unquestioned.



**Fig. 3.4:** Header f. 40v. *Codex Palatinus Graecus 398* (Heidelberg), showing the title and attribution of the text.

<sup>234</sup> The fact that it follows Arrian's *Periplous of the Euxine Sea* may have led the scribe to attach a title and author, which justified the inclusion of this text within a larger collection of predominantly (but not exclusively) geographical works. The *Periplous* text is bound with seventeen other texts: 1) an anonymous *periplous* of the Euxine Sea (ff. 11r-16v); 2) Arrian's *Kynegetikos* (ff. 17r-30r); 3) Arrian's *Periplous* of the Euxine Sea (ff. 30v-40r); **4) *Periplous of the Erythreian Sea* (ff. 40v-54v)**; 5) *Periplous* of Hanno the Carthaginian (ff. 55r-56r); 6) Philon of Byzantium, *On the Seven wonders of the world* (ff. 56v-59v); 7) a collection of passages from the *Geography* of Strabo (ff. 60r-156v); 8) Pseudo-Plutarch *On names of rivers and mountains* (157r-173r); 9) Parthenios of Nikaia *Love Stories* (ff. 173v-188v); 10) Antoninus Liberalis *Collection of Transformations* (189r-208v); 11) Hesychius of Miletos *On the history of Constantinople* (ff. 209r-215v); 12) Phlegon of Tralles *Book of Marvels* (ff. 216r-236r); 13) Apollonius (Paradoxographus) *Book of Marvels* (ff. 236v-243r); 14) Antigonos of Carystus *Collection of marvels* (ff. 243v-261v); 15) Hippocrates *Letters* (ff. 262r-282v); 16) Themistocles *Letters* (ff. 283r-302r); 17) Diogenes *Letters* (ff. 302v-321v); 18) Brutus *Letters* (ff. 331v-333v).

<sup>235</sup> Ramusio indicated in 1550 that 'Sono alcuni, che dubitano, che questo Arriano non sia quello, che scrisse la navigazione di Nearcho, - essendo che lo stilo di quell historico sia molto diverso da questo del presente auttore' ('There are those who doubt that this is that Arrian, who wrote the navigation of Nearchos, since the style of that history is very different from that of the present author.' (fol. 281a, line 9)). In Müller's first critical edition of the text in 1855, the text is referred to as anonymous. Müller explains the erroneous attribution to Arrian thus: 'In codice Arriano liber vindicatur. Quod auctoris nomen ex periplo Arrianeo Ponti Euxini, qui ante nostrum opusculum in codice legitur, temere huc translaturum est' (257, introductory note 'In the codex Arrian is indicated. That is the name of the author from Arrian's *Periplous of the Euxine Sea*, which lies before our little work in the codex [and which is] randomly translated here.'). Dietrich, in his 1883 German translation based on Fabricius' 1883 critical edition agreed that '[d]ieser Periplus gehört aber einem Anonymos und nicht dem Arrianos' ('This *Periplus*, however, belongs to an anonymous author and not to Arrian.') (5).

Certainly, there is no reference within the text to the author's chosen genre, nor any mention of texts which may have been exemplars, thereby distinguishing it from the report documents noted above. Indeed, its opening is abrupt and makes no comment about the aim of the text:

Τῶν ἀποδεδειγμένων ὄρμων τῆς Ἐρυθρᾶς θαλάσσης καὶ τῶν περὶ αὐτὴν ἐμπορίων πρῶτός ἐστιν λιμὴν τῆς Αἰγύπτου Μυὸς ὄπιμος, μετὰ δὲ αὐτὸν εἰσπλεόντων ἀπὸ χιλίων ὀκτακοσίων σταδίων ἐν δεξιᾷ ἡ Βερνίκη.<sup>236</sup>

The content of the *Periplus* also raises doubts as to its identity as a periplographic text (i.e. as part of a genre of texts describing journeys by water). Its unique status has already been noted by Casson. In his introduction to the 1989 critical edition he acknowledges that:

[t]he title, *Periplus Maris Erythraei*, is misleading, for the work is not at all like the other *periploi* that have come down to us, such as those of Scylax, Arrian, Marcian of Heraclea, and so on. These were first and foremost guides for seamen, whereas the *Periplus Maris Erythraei* is first and foremost a guide for merchants. It supplies some sailing information, mostly the general direction of the courses and their length, but the emphasis is overwhelmingly on trading information, the products that could be bought and sold in each port.<sup>237</sup>

Having pointed out the distinct commercial emphasis of the text, however, Casson (and almost every other scholar who cites the work) continues without further discussion to refer to it as a *periplous* and to assume implicitly and explicitly that it was produced and used in a manner consistent with what is in turn perceived as a well-defined genre. This raises the second and more complicated answer to the question just posed: how coherent a genre was the *periplous* in the ancient world? Upon this hinge many of the assumptions

<sup>236</sup> The *Periplus* chapter 1 'Of the designated harbours of the Erythreian Sea and the ports of trade on it, first comes Egypt's port of Myos Hormos and, beyond it, after a sail of 1800 stades to the right, Berenicê.'

<sup>237</sup> Casson (1989) 8.

made about *The Periplus of the Erythreian Sea* because its creation as part of a recognised body of literature with an acknowledged and accepted purpose in the ancient world would answer many questions about its origins and aims. The existence of a periplographic genre is, with few detractors, accepted within studies of ancient travel and cartography.<sup>238</sup> There has, nevertheless, been little systematic study of the genre or the texts which make it up. When Casson states that the *Periplus of the Erythreian Sea* is atypical of *periploi* ‘such as those of Scylax, Arrian, Marcian of Heraklea, and so on’ to what is he in fact referring?

Surviving or known texts usually regarded as *periploi* include the *Periplus of Hanno the Carthaginian* (6<sup>th</sup> c. B.C.),<sup>239</sup> the *Periplus of Pseudo-Scylax* (4<sup>th</sup>/3<sup>rd</sup> c. B.C.),<sup>240</sup> the *Periplus of Scymnos of Chios* (c. 110 B.C.),<sup>241</sup> Arrian’s *Periplus of the Euxine Sea* (2<sup>nd</sup> c. A.D.)<sup>242</sup> and Marcian of Heraklea’s fourth-century *Periplus of the exterior sea*.<sup>243</sup> Fragments and summaries of lost *periploi* survive in Avienus’ fourth-century A.D. *Ora maritima*, but since he converted information from a number of texts into a poetic form for his own purposes, his work is of limited use in reconstructing the *periplous*-genre.<sup>244</sup> As a selection of texts, these survivals represent quite a heterogeneous collection and do not necessarily support the conclusion that *periploi* were ever intended as guides to travellers. Shipley points out that from the perspective of literary analysis:

---

<sup>238</sup> Dilke (1987) for example, refers to Marcianus of Heraclea Pontica, ‘a Greek writer of *periploi*’ (237) and suggests that ‘[i]f Roman ships’ captains wanted to consult a work that would help them navigate outside the Straits of Gibraltar, they could perhaps have turned to the periplus of pseudo-Scylax, though in the form in which it has come down to us it contains nothing on sea areas north of Cadiz.’ (253). Shipley (2012) provides a criticism of the notion of a periplographic genre, discussed further below.

<sup>239</sup> Müller (1855) 1-14, Schoff (1912), Ramin (1976), Oikonomides (1977), Blomqvist (1979).

<sup>240</sup> Counillon (2004), Müller (1855) 15-96.

<sup>241</sup> Müller (1855) 196-237.

<sup>242</sup> Liddle (2003), Müller (1855) 370-423.

<sup>243</sup> Müller (1855) 516-62.

<sup>244</sup> Berthelot (1934).



[a]s well as the obvious differences of content and organization between these works, they appear to share none of the literary features - for example, in narrative construction, overall architecture or selection of content - that might amount to the sort of rules of composition we could regard as constitutive of a literary genre. The exception may be the very fact of coastwise arrangement... Beyond that, any intertextuality between these texts is almost entirely limited to the bare exposition of sometimes similar, even identical, facts and does not (as in, say, tragedy or the novel) invite us as readers to reflect on our knowledge of similar texts. It is unwise, therefore to over-amplify the degree to which these authors were consciously writing in such a way as to invite comparison with one another.<sup>245</sup>

One further commonality does exist, but undermines further the contention that such texts formed a separate or utilitarian genre of Greek or Roman literature. A striking feature of surviving *periploi* is their self-conscious exceptionality. They usually describe or purport to describe extraordinary (or at least unusual and lengthy) voyages or 'world geographies'. Hanno the Carthaginian describes an exciting and eventful journey along the west African coast. Marcian of Heraklea emphasises from his title onwards the externality of the spaces he is describing (the external sea) and immediately draws attention to far-flung destinations, such as Taprobane. The surviving *periploi* of the Black Sea are less dramatically orientalisising/occidentalising but still deal with a space on the edge of the Roman world, a fact emphasised by Arrian and the anonymous author's persistent reference to the unfamiliar and tributary peoples found along its coastline.<sup>246</sup> Thus such texts may not reflect the connected nature of the ancient world but rather the outer and unfamiliar areas of it. Mundane, localised travel is strikingly absent from the assembled

---

<sup>245</sup> Shipley (2012) 135.

<sup>246</sup> Arrian, chapter 10, lists the peoples along the shores of the Black Sea and beyond, including their status in relation to the Roman Empire and the treaties which give them autonomy. Such references seem not have been guides or aids to travel (it is unclear how such observations would have assisted a sea-borne traveler) but observations about the expanse and impact of Roman power. The anonymous *Periplous of the Euxine Sea* is somewhat more exoticising. Chapter 45 for example makes reference to the warlike Amazons who inhabit the shores of the sea.

periplographic literature despite the fact that such micro-networks would, presumably, have provided more valuable information for the majority of travellers, if they relied on such documentation to move around. Comparison with land itineraries, often seen as the terrestrial twin of the *periplous*, for which there is better (though still not entirely uncontested) evidence for practical use as an aid to travel, demonstrates that shorter, more local journeys are recorded.<sup>247</sup> Rather, *periploi* seem testament to an appetite for the exotic and may, in fact, reflect precisely the ‘otherness’ of many of the spaces described. The emphasis in some cases, such as the *periploi* of the Black Sea, on the relationship of neighbouring tribes to the Roman Empire and Arrian’s explicit memorialising of Hadrian’s visit to the region seem to speak to the apparent ancient association of imperial power with geographical expansion and (reflective of such expansion) geographical documentation: ‘the traditional Roman notion that the power to map the empire, or to put its descriptions in order, equals the supreme power to command spaces and peoples’.<sup>248</sup>

If, from the perspective of works of literature, *periploi* do not appear to conform to the requirements of a conventional genre, what of the practical argument for regarding *periploi* as functional texts, whose use in the Roman world for a common purpose might justify labelling them as a specific body of texts, albeit executed in a variety of styles? Conceptions of space in the ancient world and the corollary question of the uses of cartographic and written, ‘linear’ representations of space for travel are highly contested.<sup>249</sup>

---

<sup>247</sup> Savage-Smith (2009) 16.

<sup>248</sup> Lozovsky (2008) 172-3.

<sup>249</sup> Debate ranges from a view of the Roman world as cartographically minded and dependent much like the modern world (with necessary differences in scale) on mapping for travel and administration (see especially Dilke (1987b)), to an extreme alternative which postulates that the Roman understanding of experiential space (as opposed to theoretical models, which could be planar as in the case of Strabo’s geographical maps)

While this debate is extensive, certain features are worth examining in relation to the observations made above about *periploi* since these maritime texts have rarely been the focus of discussions about space. In particular, periplographic literature is not only assumed to represent a coherent genre, but is also usually regarded as serving a practical purpose. Like the land-based itineraries, they are regarded as texts for travel, and unlike the land-itineraries, their generally more limited treatment by historians of space and cartography means that comparatively little challenge has been posed to this thesis. I would suggest, however, that closer attention to the features of so-called *periploi* (especially their frequently exotic or adventurous bent) enables closer engagement with pre-existing debates over terrestrial cartography and travel, and may provide reflections pertinent to those discussions. Above all, unlike the most rudimentary itineraries, which appear to be little more than lists with places, distances and occasional observations, all surviving texts considered to be *periploi* are literary in the sense that raw geographical information is embellished at the very least into full sentences, and more usually discussions of a distinctly textual nature. Leaving aside list-itineraries there is not only limited evidence that more discursive works were intended for use by travellers, but there is rather inferential evidence precisely that they were not.

Dilke, in many ways the founder of studies of ancient cartography, and the most striking proponent of a maximalist view of ancient mapping and map-consciousness

---

was entirely linear, represented by itineraries. According to this model, Roman movement through space was almost entirely determined by relative and linear arrangement of places along routes through a conceptual landscape in which measurable topographic reality was subordinate, distorted and irrelevant (especially Janni (1984), Bekker-Nielsen (1988)). Increasingly a middle-ground is emerging in which it seems clear that elements of linear and planar spatial awareness and recording co-existed (as indeed they do today), and in which the evidence and perspective of each source must be considered in its specific context (e.g. Sundwall (1996)).

argues, for example, on the basis of surviving classical evidence that maps were a common part of educated understandings of space. Among his examples he cites the following fourth-century case:

Julian the Apostate, emperor 360-63, thanks his friend Alypius of Antioch thus: "I happened already to have recovered from my illness when you sent the geography; all the same I was glad to receive the map you sent. Not only does it have better drawings [*diagrammata*] than previous ones, but you have made it more attractive by adding iambic verses." This may have been a map of Britain, since Alypius was or had been *vicarius* of the British provinces.<sup>250</sup>

Despite using this anecdote to support the extensive use of maps in the Roman world, the case seems to demonstrate a use for geographical texts (illustrated or otherwise), far more in-keeping with the examples of *periploi* outlined above: entertainment precisely for people not travelling. Julian thanks his friend for sending the text despite the fact that when it arrived he was no longer ill (i.e. not in need of something to occupy his attention). He also comments on the fact that both the illustrations and the iambic verses make it more attractive. Finally, Dilke's suggestion that the map may have been one of Britain, while speculative, would if true further reinforce the suggestion that this was a text to be read and enjoyed: Julian was not travelling to Britain nor is there any evidence to suggest his imminent intention to do so.

Indeed, almost all of the cases cited by Dilke in what remains the most systematic and detailed study of maps and itineraries in the ancient world, suffer from the same problem: that they illustrate the use of maps or itineraries but not by people travelling. Further examples offered include that of Propertius (c. 50 B.C. to c. 16 B.C.) describing a soldier's lover occupying her time during his absence:

---

<sup>250</sup> Dilke (1987b) 254. "Ἡδὴ μὲν ἐτύγχανον ἀνεμένος τῆς νόσου, τὴν γεωγραφίαν ὅτε ἀπέστειλας· οὐ μὴν ἔλαττον διὰ τοῦτο ἠδέως ἐδεξάμην τὸ παρὰ σοῦ πινάκιον ἀποσταλέν. ἔχει γὰρ καὶ τὰ διαγράμματα τῶν πρόσθεν βελτίω, καὶ κατεμουσώσας αὐτὸ προσθεὶς τοὺς ἰάμβους" (Letter 7, trans. Wright (1923)).

His Arethusa spends the winter nights studying maps: "I learn in what area the river Araxes, which is to be conquered, flows, how many miles the Parthian horse runs without water. I compel myself to learn painted worlds from the map [*tabula*]...; which land freezes up, which crumbles from here, which wind gives good sailing to Italy." Editors mostly treat *tabula* here as a map rather than picture, though the expression may include both a map and its commentary.<sup>251</sup>

Editors are almost certainly right to assume that at the very least this is a map and commentary rather than just a map, since the woman refers to features such as climate, wind direction and the stamina of Parthian horses. Significantly, as in the case of Julian I, this example also shows the person not travelling consulting geographical literature. Arethusa's lover may also have used such works on his campaign but if he did, Propertius does not mention it. Indeed, Dilke does refer to the question of military mapping in his discussion of classical cartography, commenting that:

The extent to which Roman expeditions carried maps is open to dispute. If the word *forma* means "map" in several expedition accounts, both compilation and use are attested; but in any case there is at least one reference, and probably two, during the early empire to expedition maps sent back to Rome by commanders in the field.<sup>252</sup>

Again, this constitutes a valuable reminder that maps were uncommon enough in antiquity that there is no well-understood word for 'map' in Latin or Greek. Furthermore, while there is evidence of people who travelled (merchants or soldiers) providing data to map makers, there is far less pre-modern evidence for travellers using the maps

---

<sup>251</sup> Dilke (1987b) 253, citing Propertius, Book Four, 3.34-9:

et disco, qua parte fluat uincendus Araxes,  
 quot sine aqua Parthus milia currat equus;  
 cogor et e tabula pictos ediscere mundos,  
 qualis et haec docti sit positura dei,  
 quae tellus sit lenta gelu, quae putris ab aestu,  
 uentus in Italiam qui bene uela ferat.

<sup>252</sup> Dilke (1987b) 253.

themselves. In this case, the maps are sent back to Rome from campaign with no mention made of their having been produced or copied for military use by the commanders in the field.<sup>253</sup> Delano-Smith further makes the point that pre-modern evidence for way-finding suggests reliance on itineraries rather than maps.<sup>254</sup> Even in the case of maritime itineraries, however, the evidence for their use as aids carried by the traveller post-dates the early medieval period considerably.<sup>255</sup>

A final example provided by Dilke again fails to prove his point but supports the contention that travel literature, which Dilke here does not differentiate from itineraries, (and maps where there is evidence for their production), were produced as a by-product of travel but not to assist in travelling. Dilke tries to use the example of Arrian's *Periplus of the Euxine Sea*:

Itineraries for land journeys and simple periploi for sea journeys were also commonly used. A governor such as Arrian, second century A.D. (who was also a man of letters) chose to compile an expanded periplus for his sail around the Black Sea.<sup>256</sup>

Yet this interpretation of the text is a clear misrepresentation. The *periplus* of Arrian was not compiled *for* his sail around the Black Sea. He purports to have compiled it *on* his journey (with the probability that he at least polished or edited the text *after* his

---

<sup>253</sup> Closely related to the argument that soldiers on campaign produced maps which were sent back to authorities, Savage-Smith (2009) makes the argument based on the eleventh-century Arabic text commonly known as *The Book of Curiosities* that there is a close connection between mapping and trade in the medieval world, citing the map-maker's reliance on mercantile sources of information in this text (2009, 20) and the information which can be extracted from such maps about the trading world of the map-maker (2009, 28), but while it seems clear that mapping relied on merchants there is no corresponding indication from this particular geographical treatise that merchants relied on maps.

<sup>254</sup> (2006) 29-68.

<sup>255</sup> Cook (2006) 76-8 presents an early modern case study demonstrating the reluctance of many sailors to use charts or maps rather than traditional astral navigation and personal and collective experience of currents since charts were not regarded as being sufficiently reliable.

<sup>256</sup> Dilke (1987) 254.

journey).<sup>257</sup> Arrian's *Periplous of the Euxine Sea* is yet another example of travel leading to the production of writing about it, which is in turn sent to somebody else (in this case the emperor, Hadrian) for their entertainment.<sup>258</sup> This is not to suggest that such texts were not expected to reflect real circumstances and they may have been perceived as sources of information about the empire's neighbours. There is, however, no evidence for such texts being used as practical guides or records for state or private use.

In keeping with other literature from the classical world, therefore, with the possible exception of list-itineraries, the texts regarded as *periploi* do not particularly resemble travel guides so much as travel literature. As such, the construction of a periplographic genre based on use not style seems equally unsatisfactory. An alternative does, however, present itself. With one exception, none of the surviving texts considered to be *periploi* identify themselves as such within their text: the *Periplous* of Marcian of Heraklea, which may be considered the archetypal *periplous* (if the type is presumed to exist), and its *prooimion* deserves close attention, especially in relation to the openings of other texts discussed above:

[Τῆς μὲν ἐντὸς τῶν Ἡρακλείων στηλῶν] κειμένης θαλάσσης, ἣν ὁ περιέχων τὴν γῆν ὠκεανὸς [πρὸς] ἐσπέρας ἐπιτελεῖ, κατὰ τὸν καλούμενον Ἡράκλειον πορθμὸν τὴν εἰσροὴν ποιούμενος Ἀρτεμίδωρος ὁ Ἐφέσιος γεωγράφος ἐν τοῖς ἑνδεκά τῆς γεωγραφίας βιβλίοις τὸν περίπλουν, ὡς ἂν ἦν μάλιστα δυνατὸν, συνέγραψεν, ἡμεῖς δὲ τῶν βιβλίων τούτων τὰς περιττὰς τοῦ μνημονευθέντος ἀνδρὸς παρεκβάσεις, προσέτι δὲ βαρβάρων Αἰθιοπικὰς πόλεις ἀφέντες, ἐν ἐπιτομῇ σαφέστατα μετ' ἀκριβοῦς [τῶν] ἐφευρεθέντων προσθήκης τὸν περίπλουν ἐποίησάμεθα, ὡς μηδὲν

<sup>257</sup> As the quotation from the opening of the text (see above) reflects, the entire text is in the past tense and it concludes with the comment that the document records observations made during the journey.

<sup>258</sup> Hadrian, it must be remembered, had already travelled around the Black Sea – a point made by Arrian in his text – so Arrian's work was not intended for the emperor's assistance either. The opening of the text (see above) refers to Arrian standing in the same spot as the emperor Hadrian and throughout the document refers to potentates who have been awarded their kingship by Hadrian and building works being undertaken on the emperor's orders.

ἐνδεῖν πρὸς τελειοτάτην σαφήνειαν τοῖς περὶ τοῦτο τὸ μέρος τῆς γεωγραφίας σπουδάζουσι. Τῶν [δὲ] ὠκεανῶν ἐκατέρων τοῦ τε ἑσπερίου... ἐκ τῆς γεωγραφίας τοῦ θειοτάτου καὶ σοφωτάτου Πτολομαίου ἕκ τε τῆς Προταγόρου τῶν σταδίων ἀναμετρήσεως, ἦν τοῖς οἰκειοῖς τῆς γεωγραφίας βιβλίοις προστέθεικεν, ἔτι μὴν καὶ ἐτέρων πλείστων ἀρχαίων ἀνδρῶν, τὸν περίπλου ἀναγράψαι προειλόμεθα ἐν βιβλίοις δυοῖ, τὸν μὲν ἑσπερίον καὶ μεσημβρινὸν ὠκεανὸν ἐν τῷ προτέρῳ βιβλίῳ, τὸν δ' ἑσπερίον καὶ τὸν ἀρκτῶν ἐν τῷ δευτέρῳ, ἅμα ταῖς ἐν αὐτοῖς κειμέναις μεγίσταις νήσοις, τῇ τε Ταπροβάνη καλουμένη, τῇ Παλαισιμούνδου λεγομένη πρότερον, καὶ ταῖς Πρεττανικαῖς ἀμφοτέραις νήσοις· ὧν τὴν μὲν πρώτην κατὰ [τὸ] μεσαίτατον τοῦ Ἰνδικοῦ πελάγους κείσθαι συνέστηκε, τὰς δ' ἐτέρας δύο ἐν τῷ ἀρκτῶ ὠκεανῷ.<sup>259</sup>

While this text does use the term *periplous* it is not clear that this is intended to situate it in relation to a pre-existing body of literature. The introduction of this text does, however, make a claim to be writing in such a pre-existing genre: that of the classical literary geography. The author cites Artemiodoros of Ephesos and Ptolemy, referring to both as writers of geography.

A systematic manuscript examination along with modern critical editions of all surviving texts termed *periploi* and all texts included in the Heidelberg manuscript would enable a full examination of the relationships between texts. Nevertheless, it is suggestive that many so-called *periploi* are unique survivals in the Heidelberg Cod. Pal. Graec 398 manuscript. The extent to which the ninth century in Byzantium witnessed extensive recording of texts, including geographical works, should be considered as a possible

---

<sup>259</sup> Müller (1855) 515, ‘The geographer Artemiodoros of Ephesos most diligently described in eleven books the circumnavigation of the sea between the pillars of Herakles, which the ocean that surrounds the earth flows in through in its west part at the ferry of Herakles [and] we have left aside from those books the man’s digressions, setting aside the cities of the barbarians of Ethiopia in a most clear summary with accurate supplement of what has since been found out, in order that nobody shall lack perfect clarity who desire to know about this part of geographical knowledge. Indeed, both oceans of the east and the west... we have described together to be brought forth publicly in two books from the most divine and most wise Geography of Ptolemy and the dimensions in stades of Pythagoras, as if their geographical books were set side by side, or indeed the two great men, the eastern and the southern ocean in the first book, the western and the northern ocean in the second, together with the large islands lying within them, namely that one called Taprobane, which was earlier called Palaismoundou, and the two Britannes which lie in the middle of the Indian sea and in the northern Ocean respectively.



context for the grouping of these thematically similar but temporally disparate and literarily varied texts. Their organisation into collections and, possibly, the appending of titles which seemed to reflect their similarities may also be attributable to this period.

Based on this dissection of the periplographic genre, it would appear not only that the *Periplous* fits only awkwardly into a schema including other seafaring texts, but also that these texts make far more sense if divorced from a casually-asserted but strained relationship with linear, list-itineraries apparently used for navigating space in the ancient world (however this was done in practice). Rather, in their narrative dimension, ethnographic interests and lack of evidence for use, such texts appear to fit better into the pattern of scholarly, literary geographies and travel accounts which did have an inter-textual and generic identity in the classical world, and overlapped with the report-writing genre in that their content was expected to reflect accurately on the world (even if the reader would not personally test its accuracy).

The argument of the two routes described in the *Periplous* is a significant piece of supporting evidence for this contention. Casson wrote in 1980 that the *Periplous* actually describes two distinct trade routes, one down the coast of East Africa and the other to India. According to his analysis of sailing technology, goods traded and monsoon winds, these two routes may have been plied by two very different groups of sailors.<sup>260</sup> Though not Casson's intention, this tends to undermine his larger thesis that the text is a handbook for sailors. If this text had been intended as a practical guide the two routes could have

---

<sup>260</sup> The east African route required more limited investment and yielded commensurately lower returns, while the route to India required major investment and risk, but could produce enormous rewards. Casson (1980) makes this argument to a large extent from the data in the *Periplous* but his textual analysis, combined with supporting evidence derived from maritime archaeology and meteorological information, seems convincing.

been drawn more clearly. If these two routes are believed to have existed, however, then their treatment in the text, in which the distinctions can be unpicked by careful analysis but do not seem clear in the author's own head, seems to fit much more closely with the picture of a writer collecting information from a variety of sources and becoming measurably less secure in his knowledge as he sought further from his own cultural centre.

The foregoing discussion of the identity of the author and the status of travel writing in the Roman world raises important questions about its interpretation so far and the value of the information it provides. This is particularly relevant when one considers the extent to which assumptions about the purpose of the text have been used to support arguments about its veracity and utility as a source for Indo-Roman trade. Arguing from the aim of the author, for example, Branaccio moves from the hypothesis (or assertion) that the text is a merchant's handbook, to a tentative evaluation of the prior duration and contemporaneous volume of Roman trade with India:

The fact that by the mid-1st century A.D. an anonymous Egyptian Greek felt the need to write the *Periplus Maris Erythraei*, 'a guide for merchants' doing business in India, and that such work implies familiarity with Indian sites on the west coast and on the Deccan plateau, confirms that profitable Indo-Mediterranean commerce was well established before the date of composition of this manual.<sup>261</sup>

For a text about which less is known than in the case of the *Christian Topography* many more assumptions are made within Indian Ocean studies about the veracity of the *Periplus*.

---

<sup>261</sup> Branaccio (2005) 67.

The arguments in favour of the truthfulness of the text rest on three cornerstones: first, the text is accepted to be a handbook for merchants and therefore would have been required to be accurate in order to be fit for purpose. Second, many of the details contained within the text fit known historical realities, as was established early in the scholarship of the text.<sup>262</sup> Third, the standard of the Greek is rather poor. It is repetitious, idiosyncratic and inelegant, leading to the argument that the work is the writing of an honest, straightforward sailor. The assumption that the *Periplus* was a handbook for merchants is, at least, problematic and to argue from it that the text is accurate and therefore can be used uncritically to reconstruct mercantile activity starts to look like circular logic. With respect to the second argument almost all scholarship on the text has to some extent referred to the problem of factual accuracy and it is sufficient to say that the information in the text is certainly founded in historical reality. The third argument requires systematic critique and is relevant to the way in which the factual accuracy of the document is approached and interrogated in scholarship.

The best term for the personality of the author of the *Periplus* as he is perceived by scholars of the text is 'straightforward'. It encompasses a variety of reactions which, while not identical, testify to a similar underlying conception of the writer who is, in sum, considered not to have been overly educated. He was literate, clearly, but his Greek lacks style and is often repetitive. He is regarded as a merchant with justification from the commercial perspective of the text. Based on these two conditions – minimal education

---

<sup>262</sup> Vincent (1807, reprinted 1998) 74-517 systematically compares each geographical location in the text with other classical references, early modern accounts of travel and with recent British explorations of the maritime route to India with the primary aim of verifying the text.

and mercantile profession – the assumption of authorial honesty naturally seems to arise:<sup>263</sup>

On any reading the enormously practical perspective of its author shines through. Whereas Pliny speaks in generalising and moralising terms, the Periplus author is centrally concerned with specific objects of trade at specific places, and with the conditions of engaging in trade. From the text we get an acute sense of the dangers involved, e.g. pirates, winds, hostile competitors. The plain, sometimes repetitious language used is yet another indication of its pragmatism, free of stylistic considerations. Reading it is much like overhearing a conversation between sea-captains and merchants.<sup>264</sup>

This echoes Casson's earlier comments:

It is a handbook, drawn up in unvarnished businessman's language, or the use of Greek-speaking shippers, skippers, or agents who, working out of the Red Sea ports of Roman Egypt, sailed south to trade along the coast of Africa or east to trade with the coasts of India.<sup>265</sup>

And again in his 1989 critical edition:

He was a businessman, not a man of letters. He uses the Greek of his day, the *koinê*, but writes a businessman's version of it, purely functional, flat, and styleless, replete with repetitions and studded with technical language and trade terms, much like the writing we meet in the business documents among the Greek papyri found in Egypt. Yet he can, when he wants, rise to a higher level. His description (46:15.22-16.2) of the mighty tides along India's northwestern coast conveys excitement, his words have drive and color. And every now and then he attempts to break out of the businessman's unvarnished style by deliberately avoiding a repetition or by a conscious touch of literary elegance.<sup>266</sup>

---

<sup>263</sup> Another study might speculate productively on what the perceived relationship between education, profession and reliability by scholars in the modern academy says about contemporary social prejudices and attitudes.

<sup>264</sup> Parker (2002) 63.

<sup>265</sup> Casson (1983) 164.

<sup>266</sup> Casson (1989) 10.

The use of ‘businessman’s language/jargon’ to explain almost any irregularity of word use or indeed, some unclear passages in the text, demonstrates a conviction in the author’s fundamental honesty which has affected all scholarship.<sup>267</sup> This is not a text discussed in terms of its rhetorical aims or objectives, or the information it may have concealed or misrepresented, because such considerations would be considered beyond the purview of the author as he is conceived.

As in the case of the *Christian Topography*, however, an alternative explanation suggests itself. The style of the *Periplus* is poor in comparison to other literary works of classical geography, but it is not fundamentally different in structure and content. Certainly, the manuscript compiler did not feel the need to separate it from the other geographical works with which it was bound and even titled it as a text of Arrian, ostensibly twinned with Arrian’s *Periplus of the Euxine Sea*. Rather than considering this to be a unique text loosely fitting into the edges of a fuzzily-defined genre of *periploi*, might it be regarded more fruitfully as a poorly executed (though undoubtedly interesting) example of a more heterogeneous but better understood genre of classical geography, with overlap into categories of synthetic, information-gathering texts known to have been produced in the Roman world by masters such as Pliny the Elder but also by comparatively obscure authors like Marcian of Heraklea? If considered part of such a category of informative writing it conforms more closely to narrative and personal accounts such as those of Marcian of Heraklea and Arrian than to theoretical and holistic works such as Strabo.

---

<sup>267</sup> Casson (1983) 199 on the possible evolution of one example of such ‘technical language’; Casson (1984) makes use of ‘sailor’s jargon’ explain various irregular word uses in the text.

It is also likely that the author of this text was or had been a merchant, but this is not an obstacle to the suggestion of his having tried to write a work of literature (here defined as work intended to be read – whether for enjoyment or edification – and which therefore deploys rhetorical choices, however mundane, to engage its reader. Literature is, in this sense, contrasted with ‘record-keeping’, in which something might be written down simply in order to convey or preserve specific factual content, without any consideration given to form or style). The Muziris Papyrus demonstrates the integral use of written documentation in the first centuries of the Indian-Roman trade thus there is no reason to suppose that the author of the *Periplus* had not received some formal education.<sup>268</sup> It also, incidentally, illustrates the alternative ‘record-keeping’ use of this literacy for a document which does not use full sentences, cite any extraneous information, or structure its content in anything but a utilitarian and formulaic manner. By contrast, the similarity with features of Homeric verse noted by Frisk in the *Periplus* further represents an apparently literary flourish distinguishing the text from purely functional examples of information gathering and storage.<sup>269</sup> If the *Christian Topography*, as argued above, represents a work of classical geography it adds further support to the suggestion that mercantilism and literary aspiration were not mutually exclusive in the Roman world.

As a work of geography, the structure and flow of the *Periplus* certainly conforms, even if the emphasis on traded goods is somewhat idiosyncratic. In comparison with, for example, Arrian’s account of his voyage around the Black Sea, the same pattern

---

<sup>268</sup> The so-called Muziris Papyrus (P. Vindob G 40822) in the collection of the Austrian National Library was first published in 1985 by Harrauer and Sijpesteijn. It is a single sheet of papyrus bearing a second-century text which, on both sides, deals with the transportation of a shipment of cargo from the Red Sea to Alexandria and to a loan made with respect to Muziris, the port on the southwest coast of India, which has tentatively been identified as the archaeological site of Pattanam (see chapter six). It has been reproduced fully and translated into English by Casson (1990).

<sup>269</sup> Frisk (1927) 84.

is observed of movement from one named location to another. Each is given in relation to known landmarks,<sup>270</sup> and each place is provided with some detail about local political history, ethnography and local practice.<sup>271</sup> In this sense it conforms well not only with the recent re-interpretation of Pseudo-Skylax as a work of geography, but also with the analysis of geographical discussion in Ammianus Marcellinus by Sundwall, which emphasises the extent to which ‘verbal geography’ played a part in Marcellinus’ spatial conception.<sup>272</sup> If the thesis is considered plausible that the *Periplus* was written by a merchant-cum-author then the preponderance of commercial details may be explained as the mnemonic clues which the author found most useful. While very common, however, such details are supplemented by information about tides, local botany and above all ethnographic descriptions, such as of the fish-eaters, which are clearly reminiscent of classical works of travel and geography.<sup>273</sup>

It is doubtful that anything further about the identity of the author of the *Periplus* or its purpose will come to light from extraneous sources, thus uncertainty will remain. Such uncertainty and debate must, however, be acknowledged in scholarship using this text, not subsumed into a convenient shorthand narrative (such as ‘merchant’s handbook’). If the *Periplus* is considered to be a work within a genre of informative writing, including classical geography, then its interpretation must also be reconsidered. First reframing the

---

<sup>270</sup> Many chapters (2, 3, 8, 0, 10, 11, 13, 15, 19, 20, 21, 26, 27, 29, 32, 33, 36, 37, 38, 40, 41, 42, 53, 58, 59, 63, 64) begin by giving the location of the next destination in relation to the place previously discussed or by giving a distance beyond the last mentioned place (chapters 4, 5, 16, 22, 23, 25).

<sup>271</sup> *Periplus* chapter 2 provides details of the various barbarians living along coast. Chapter 15 refers to harmless crocodiles on the island of Menuthias.

<sup>272</sup> Sundwall (1996) explores the idea of verbal mapping, whereby geographical information in the form of egocentric coordinates and mnemonic labels in the form of disparate factual snippets enables a reader/listener to build up a picture of the landscape or journey with the example of the writing of Ammianus Marcellinus. Counillon (2007) 44 applies the idea of ‘verbal maps’ to the text of Pseudo-Skylax.

<sup>273</sup> On tidal and weather patterns, chapters 12, 25, 38, 40, 45, 46, 57; on botanical details, chapters 65; on zoological details, chapters 4, 15, 20, 40, 50, 55, 62; on ethnography, chapters 2, 15, 16, 20, 29, 33, 34, 41, 47, 58, 62, 65.

text as a work of synthetic data collection and presentation means that information must be considered selectively: that one section of the text is verifiable does not necessarily mean that other sections of the text can be considered accurate by extension. This is distinct from the argument that the text might be a composite work, which seems unlikely.<sup>274</sup> Rather, as in the *Christian Topography* it is probable that the author pulled together disparate sources of information to create his account.

Casson has argued that the lack of any detailed knowledge concerning Sri Lanka in the *Periplus* indicates that the island was not yet traded with directly or well-known by the Roman world (implicitly comparing the situation in the *Christian Topography* in which the island warrants an entire section of Book Eleven to itself).<sup>275</sup> This is lent support by the fact that Roman coins and imitations of Roman coins appear on the island only from the fourth century and do not become common until the fifth, thereby post-dating the *Periplus* but suggesting that the island may have been in some contact with the west by the time of the writing of the *Christian Topography*, but probably not much before.<sup>276</sup> Nonetheless, the comparison of the account of Sri Lanka in the *Topography* and the story of Plocamus' freedman in Pliny strongly suggests that this comparison and the drawing of conclusions by absence of evidence cannot be taken too far. Clearly some awareness of Sri Lanka had permeated the Roman world by the first century. Viewing the texts as geographical works provides an opportunity to assess the sources available to their writers and the ubiquity (or otherwise) of knowledge, rather than making sweeping generalisations

---

<sup>274</sup> Mathew (1975) 152 argues on the basis of comparison with other geographical works which indicate composite creation that this is not demonstrable in the *Periplus of the Erythreian Sea*.

<sup>275</sup> Casson (1989) 24, 83, 89.

<sup>276</sup> Walburg (2008) 52-3.



about the total state of a society's geographical understanding being encapsulated by a couple of 'truthful' snapshot accounts.

Second, if the text is considered to be a rhetorical creation, rather than an 'honest and straightforward' sailor's account (as if any written account could lack a dimension of rhetorical selection of language and content), a new opportunity is raised to interrogate the choices made by the author, for example to include certain goods of trade and not others, or to prefer certain routes over others.<sup>277</sup> Whitehouse commented that:

The *Periplus*, Cosmas, and Arikamedu are all invaluable "windows" on the maritime trade of the Indian Ocean in the early centuries A.D. - but they are desperately small windows on a large, complex, and above all *dynamic* system.<sup>278</sup>

While this constitutes a valuable reminder that the *Periplus* is a temporally bounded text which cannot be applied uncritically to fill gaps in later and earlier periods, it also demonstrates the problem with current historical approaches in Indo-Roman studies, which are almost entirely driven by interest in Indo-Roman trade and which encourage scholars to look through the text to a vast, poorly understood and thinly evidenced historical reality. No text is transparent, self-evident or independent of authorial motives. Returning the *Periplus* to the realm of literary studies may challenge some of the faith placed by historians in its minute details but may also reveal Roman perceptions of the east and Roman interaction with India in ways not hitherto explored. The emphasis on luxury rather than staple goods, reflects the perception of India as a land of wealth and a source of elite goods, examined by Parker.<sup>279</sup>

---

<sup>277</sup> Sidebotham (1990) 16.

<sup>278</sup> Whitehouse (1991) 218.

<sup>279</sup> Parker (2002) 55.

### 3.4 The ninth century and Byzantine geographical writing

In addition to their possible shared identity as works of information synthesis, associated with classical geography, both the *Christian Topography* and the *Periplous* are united by manuscript traditions beginning in the ninth century. In the case of both texts, nothing is known about their transmission prior to the ninth century, except for chronological markers internal to the texts themselves. Since the texts have not been subject to explicit comparison before, this common ninth-century origin has not received notice. Nor has the possible significance of the larger collection of geographical works within which the *Periplous* is located. This study is not the place to explore the ninth-century Greek-speaking world of manuscript production but it is the place to highlight the possible avenues of research, which might stem from a close examination of these two texts as examples of a ninth-century revival of interest in classical geographical learning. Not only the high-quality replication of an otherwise obscure geographical treatise, but also the production of a collection of selected texts dealing with geography and wonders testifies to a multi-centred interest in the shape and form of the world and in previous writings on the subject. It has not been suggested in the case of either text (but nor has it been the focus of specific inquiry) that they were intentionally modified during transmission in the ninth-century, beyond the omissions in the *Periplous* already mentioned. Nevertheless, both texts appear to have been compiled with forethought and intent in the ninth century. In the case of Book Eleven it may have been in the ninth century that it was incorporated into the *Christian Topography*. The *Periplous of the Erythreian Sea* was selected in the ninth century to be part of a collection of travel writing

of diverse periods and styles, and was given a spurious author, and perhaps a title, to integrate it into this work.

### 3.5 Conclusion

Despite their significance for Indian Ocean studies, these two texts have never received parallel analysis as works of literature, and as such their potential similarities and the implications of these for using the sources to study Mediterranean trade with India have not hitherto been considered. While the positivist readings which both texts have received are comforting in a field for which evidence is often sparse, no text is a window onto the past which can be looked through without considering the complications of authorship and transmission. Comparing them also has implications for the wider field of classical and early Byzantine manuscript and literary studies which have not been recognised due to the peripheral status of Book Eleven of the *Christian Topography* and the almost total disappearance of the *Periplous of the Erythreian Sea* from classical studies into Indian Ocean scholarship. Further study is needed into the compilation of geographical writing in ninth-century manuscripts and the significance of world geography for the ninth-century intellectual milieu of the Greek-speaking east. The surviving manuscripts of the *Christian Topography* and the *Periplous of the Erythreian Sea* provide a significant starting point for such a study.

It seems plausible based on an initial comparison of the two texts, however, that the genres of both should be radically reconsidered, and that the two should more regularly be considered together. Both texts exhibit signs of having been created out of a synthesis of

information based on the author's own experiences, but also, probably a range of written and oral sources accessible to the authors, most likely in Egypt. For readings of the texts which perceive them to be eye-witness accounts of the trading worlds they describe, this has immediate implications. Evidence that these authors were participants in these trade networks cannot guarantee their personal experience of everything they describe. Both texts must also be considered as rhetorical productions, most likely according to the arguments presented here, in the style of classical geography writing, though in the case of the *Christian Topography* with an additional theological purpose to which the genre was harnessed. Again, this means that assumptions about the 'honesty' or 'straightforwardness' of the authors must be abandoned. This is not to suggest that either author intentionally fabricated material; their chosen genre required pursuit of a particular kind of accuracy. It does, however, mean that the reader must be sensitive to choices made about what information to include, its form and order and possible borrowings from the realm of other scientific writing, from which the genre of classical geography permitted borrowing on the grounds of authority, such as the writings of Pliny for the author of the *Christian Topography*.

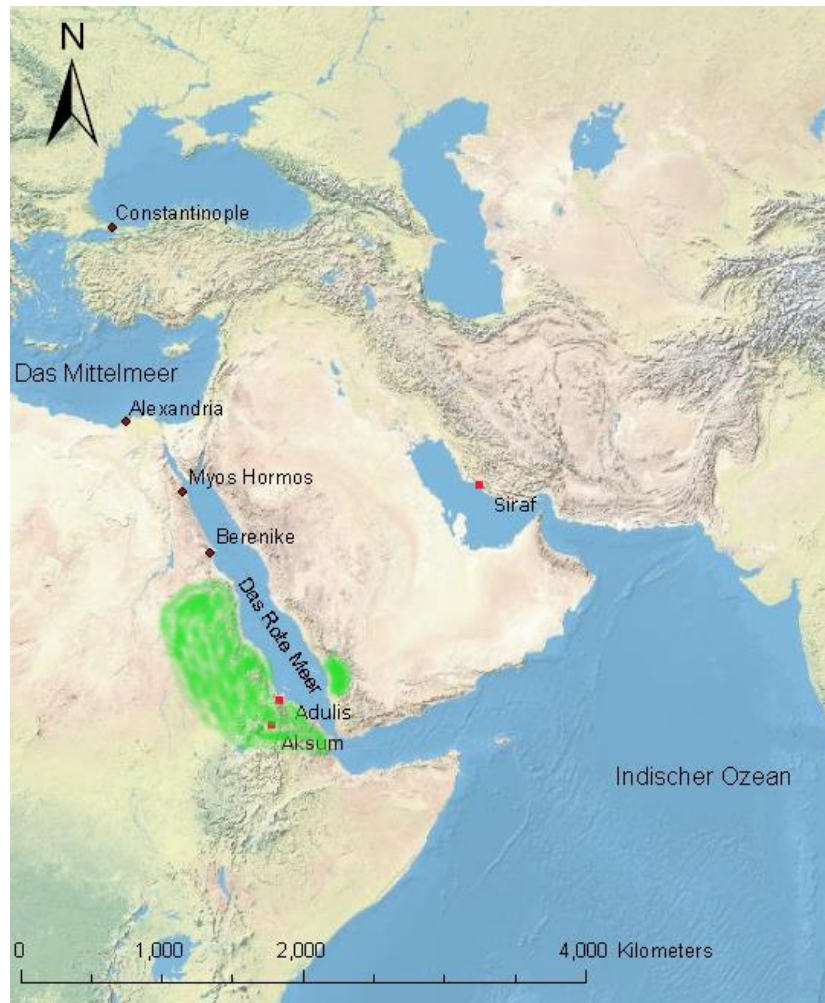
Above all, a resituating of the texts must consider their transmission, and therefore entail serious questions about their reception and importance at their time of writing. That both of these texts are preserved in ninth-century and later manuscripts means that we have little data as to their popularity or consideration prior to this. The *Topography* provides some hints in the concession that the first five books were so poorly received that more argumentation had to be added. Recent scholarship has begun to explore the fact that the copying of the *Christian Topography* in the ninth-century, rather than reflecting belief in

its cosmological argumentation, was responding to theological tropes in the text concerning representation, which were relevant to contemporary Byzantine debates about the use of icons. In the case of the *Periplous of the Erythreian Sea*, however, we have no such information. Arguments derived from the fact that the text, having been written, must therefore have been (widely) read or reflect a great demand for such information must therefore, be disregarded. The same must currently be said for the titles and attributions of both pieces. In short, for understanding connections between the Mediterranean and the Indian Ocean in the first six centuries A.D., both of these texts must for now be considered entirely on the basis of their internal, textual content. Nothing can be known of their authors or their reception and, in the case of the *Christian Topography*, accompanying images must be treated highly sceptically.

## CHAPTER FOUR: THE AKSUMITE EMPIRE

### 4.1 Introduction

The *Periplus of the Erythreian Sea* and the *Christian Topography* are two of the most important written sources for Roman trade with India. As chapter two explored, archaeological and numismatic evidence has long been a part of the narrative of Indo-Roman trade but its relationship to the few literary sources has created problems of interpretation which, like the unduly straightforward reading of those accounts examined in chapter three, require close analysis and may benefit from the changed perspective of Indo-Byzantine exchange. Examining the role of the Aksumite Empire as it has been presented in Indo-Roman studies and as it may be re-interpreted in light of recent archaeological developments is vital for exploring the role of intermediary figures in trade between the Mediterranean and the Indian Ocean.



**Fig. 4.1:** *Map of the Aksumite state with major sites marked.*

This chapter will first present a background to the Aksumite Empire, focusing on its treatment in Indo-Roman studies, the source base from which this narrative has been created and the ways in which this history reflects wider patterns of Eurocentrism. Recent results of archaeological survey and excavation will then be used to re-examine the written sources and present an alternative framework for understanding the role of Aksum in trade with India, which fits more closely with recent studies of east Africa seeking to set its early medieval civilization in its own terms rather than in the shadow of the Roman Empire. Finally, numismatic studies have been crucial in shaping the interpretation of Aksumite

history. The theories applied to Aksumite coinage as a medium of exchange in long-distance trade will be systematically critiqued, providing a preface to the close analysis of Byzantine coins from India undertaken in chapter five.

## 4.2 Background to the Aksumite Empire

The Aksumite Empire flourished in the region of modern northern Ethiopia and Eritrea from the third century until around the seventh, when its prominence diminished and it appears to have consolidated to a more inland and introspective position.<sup>280</sup> During the third to seventh centuries, however, it was a sufficiently significant power for the Persian writer Mani (c. A.D. 216-274) to regard it as one of the four great empires of his day (alongside Rome, Persia itself and probably China).<sup>281</sup> It is generally assumed and stated that Aksum's prominence was a result of its position at the mouth of the Red Sea, along lucrative trade routes connecting the Mediterranean with the markets of the east, which it is asserted to have controlled.<sup>282</sup> Nonetheless, the role which Aksum played in these trading connections, and the mechanism by which this propelled it temporarily to a position of global significance, are poorly understood.

The sources available for the reconstruction of Aksumite history contribute enormously to the obscurity of its economic life. There are various written references to Aksum in Greek and Latin sources, though these are often superficial and at times clearly lack specificity or accuracy. As is typical for their period and cultural context, such texts

---

<sup>280</sup> For an up-to-date and holistic survey of the Aksumite Empire, Phillipson (1998) and Robin (2012).

<sup>281</sup> Phillips (1997) 452.

<sup>282</sup> Munro-Hay (1996) 405, Peacock and Blue (2007) 9, Phillips (1997) 449-50, Seland (2012) 77, Zazzaro (2009) 49.



are also, with rare exceptions, uninterested in the mechanics of commerce. In addition to these written sources Aksum itself produced significant epigraphic records in Sabaeen, Ge'ez (a south Semitic language with a written form, developed in ancient Ethiopia) and Greek, though these concentrate in particular reigns and usually record military conquests, often over people who can no longer be identified. With a written tradition in Ge'ez stretching from the third century A.D. and an even longer tradition of literacy in Sabaeen, Ethiopia and Eritrea have a rich cultural heritage of manuscript production but most of these are ecclesiastical in nature and of much later date.<sup>283</sup>

The single largest body of evidence for the Aksumite economy is coinage. As the only medieval state in sub-Saharan Africa to issue its own coinage, Aksum has received a significant amount of numismatic attention. Arguably, the unusual act of issuing coins has diverted attention away from the many remarkable features of this coinage system and the archaeology of its circulation.<sup>284</sup> The coinage is perceived as an instrument of trade, developed in the context of Indian Ocean commercial networks and Roman currency, but various theories concerning its initiation and development will be explored in more detail below. Finally, archaeology, especially since the conclusion of hostilities between Ethiopia and the newly-formed state of Eritrea in 1991, has come to the fore as the primary source for new data concerning the Aksumite state and trading system.<sup>285</sup> Settlement archaeology,

---

<sup>283</sup> Phillipson (2009) 365 summarises the debate over one particular text from the collection at Abba Garima and recent radiocarbon dating which supports the tentative dating of this manuscript to the sixth or seventh century. Even if these manuscripts are resolved to be of such early date, they are unlikely to yield much concrete information concerning the political and economic structures of the Aksumite state.

<sup>284</sup> Munro-Hay (1984b) 16 emphasises the remarkable parity which Aksumite coinage gave the state with other great contemporary powers but this is often not acknowledged or alluded to in secondary literature.

<sup>285</sup> For a factual summary of the Eritrean war of independence: <http://www.bbc.co.uk/news/world-africa-13349078> (accessed 3/7/2013).

ceramic studies and excavations at the major urban sites and Adulis, the principle port of Aksum, have all contributed to an expanding understanding of this Late Antique polity.



**Fig. 4.2** *Map showing the contested borders in the Eritrean war of independence (image by Joe Burgess).*<sup>286</sup>

The Aksumite Empire emerges into the historical record around A.D. 330 in a flurry of source material, from Greek texts and Ethiopian tradition dealing with the conversion of its king Ezana to Christianity, to the expansion of coin production, and alterations in coin design apparently responding in part to Ezana's conversion.<sup>287</sup> Prior to this, however, the Aksumite state had been issuing coinage for a couple of generations and since around the 1<sup>st</sup> century B.C. a society often termed proto-Aksumite demonstrates a growing presence mainly through epigraphy in Sabaeans and consistent ceramic

---

<sup>286</sup> Image by Joe Burgess/New York Times, [http://opinionator.blogs.nytimes.com/2012/03/27/war-over-a-one-horse-town/?\\_r=0](http://opinionator.blogs.nytimes.com/2012/03/27/war-over-a-one-horse-town/?_r=0) (accessed 20/9/13).

<sup>287</sup> Robin (2012) 273-5 details the various sources dealing with the conversion of Aksum to Christianity and the evidence that places these uncontestedly in the reign of Ezana. Munro-Hay (1999) 15-16 details the numismatic evidence for dating Ezana's reign. This is based on a correlation with Roman coin weights, which is critiqued below, but even if the argument for dating is not taken to be completely secure, the changes in Ezana's coinage nonetheless reflect the expansion and reform of his coin issues.

assemblages.<sup>288</sup> Around the first century A.D. this polity seems to have centralised on its inland capital of Aksum, and began to carve out a political sphere which included the conquest of a Sabaeo-writing group in the Yemen known only from unvocalised inscriptions as D'MT. This was to herald a long-standing relationship with southern Arabia.

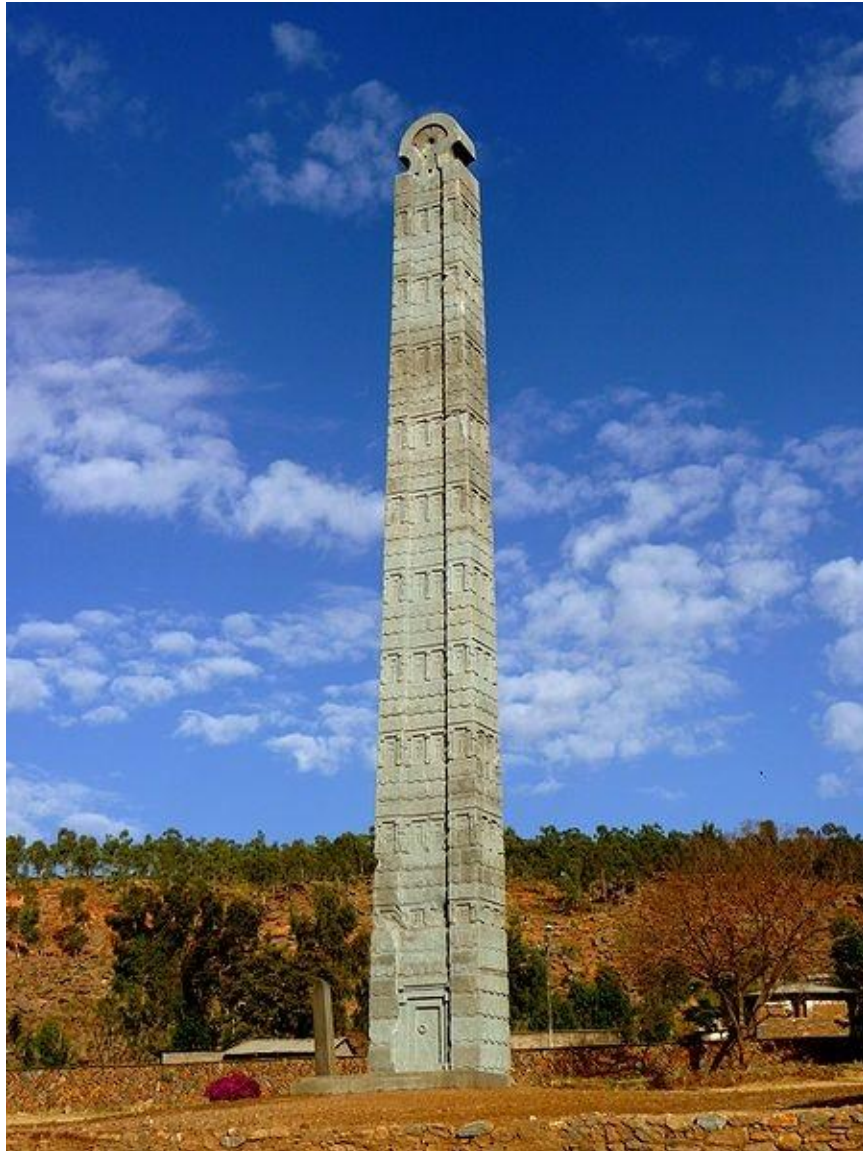
Ezana's conversion to Christianity, making Aksum among the earliest polities to adopt it as a state religion, involved a shift in the monumental structures of Aksum.<sup>289</sup> The huge monolithic stelae, which had characterised Aksumite commemorative architecture up to the first quarter of the fourth century, gave way to church architecture and more modest royal tombs. It also engendered a change in relations with the major neighbouring power to Aksum: the increasingly Christianizing late Roman Empire. The Patriarchate in Alexandria asserted authority over the developing church in Aksum and a letter from Constantius II to Ezana suggests the involvement of Aksum in wider doctrinal disputes in the Christian world.<sup>290</sup>

---

<sup>288</sup> Munro-Hay (1999) 12 on the inception of Aksumite coinage *c.* A.D. 270/290. Robin (2012) 256 on the state of D'MT and its cultural relationship to Aksum.

<sup>289</sup> Power (2013) 19-20. Phillipson (1994) discusses the change in monumental architecture, especially the funerary *stelae* which characterised pagan Aksum.

<sup>290</sup> Munro-Hay (1996) 403, Robin (2012) 275.



**Fig. 4.3:** *The stelea of pre-Christian Aksum represent an independent tradition of monumental architecture.*<sup>291</sup>

Chronologically, however, Aksumite history is strung loosely between only two fixed points: the reigns of Ezana in the fourth century and that of Kaleb in the sixth.<sup>292</sup> Kaleb ruled not only the Aksumite heartland but also drew tribute from the south Arabian

---

<sup>291</sup> The Aksum Stele, Aksum. Image by [Ondřej Žvácěk](#) (accessed 16/6/2013).

<sup>292</sup> Munro-Hay (1984b) 15, Robin (2012) 257.

kingdom of Himyar.<sup>293</sup> He is again documented in epigraphic, numismatic and external narrative sources, giving his reign a chronological fixity and a corporeality of detail which is lacking for most other Aksumite rulers. Around these two monarchs, the chronological sequence of rulers has been fairly securely established mainly on the basis of numismatic evidence supported by epigraphy. This chronology remains, however, subject to debate and increasingly minor modification, and many of the rulers within it are known only from their coins.<sup>294</sup>

Kaleb's reign marked a period of prosperity and global prominence for Aksum, as their relations with the late Roman Empire became part of a wider dynamic encompassing the Sasanian Persian Empire. At a time of conflict between Constantinople and Ktesiphon, the Roman Empire seems to have sought out the help of its co-religionists in east Africa for both military and economic aid. In particular Justinian I seems to have hoped that Aksum could provide a means for the Roman state to acquire silk and other eastern goods without paying Persian merchants and thereby lending financial aid to an enemy.<sup>295</sup>

From the early seventh century, for reasons not fully understood but often attributed to the decline in the Red Sea trade, the Aksumite Empire stopped issuing coinage and appears to have contracted back towards its inland site.<sup>296</sup> The port of Adulis shows a decline in settlement and activity and the Aksumite state from this period largely

---

<sup>293</sup> Robin (2012) 281-2.

<sup>294</sup> Hahn has been most responsible for the construction and refinement of a numismatic chronology of Aksum, including his 1983 'Die Munzprägung des Aksumitischen Reiches' and 1984 'Further reconsiderations on the chronology of the coinage of Aksum'. Hahn (2010) offers a revision to the chronology of some of the latest Aksumite rulers to issue coins.

<sup>295</sup> Prokopios *History of the wars*, Book 1, 20.9-10.

<sup>296</sup> Munro-Hay (1999) 19, Peacock and Blue (2007) 12, Phillipson (2009) 367.

disappears from world history, though its continuities with and importance for later medieval Ethiopian culture are increasingly recognised.<sup>297</sup>

### 4.3 Reinterpreting Aksum

The brief outline of the history of Aksum as sketched above is almost all that is known about its political history, stripped of the social and economic flesh which has until recently been built up from the assumed importance of Indo-Roman trade to the state. The importance of Aksum's position on the Red Sea and the asserted role of Aksumites as middlemen in trade are often repeated but the dynamic of this relationship in long-distance trade is less often elucidated. What did Aksumite 'middlemen' do and how exactly did the position of the kingdom on the Gulf of Aden translate into wealth or power?<sup>298</sup>

Archaeological research in the territories of Aksum has been sporadic since the first major excavations in 1906.<sup>299</sup> Several wars, including the war of Eritrean independence, have caused pauses in exploration and have resulted in loss of material.<sup>300</sup> However, in recent decades northern Ethiopia and southern Eritrea have been the subjects of a series of major excavations at Aksumite sites, including the capital, the second largest

---

<sup>297</sup> On the continuation of Aksumite significance and continuity with medieval Ethiopia Munro-Hay (1996) 403 and Phillipson (2009) 367.

<sup>298</sup> Phillipson (1998) 63.

<sup>299</sup> Littmann (1906) and Littmann *et al.* (1913) for the publication of the Deutsche Aksum-Expedition (1906). Subsequently: Anfray (1963, 1965, 1972, 1973, 1974), Bard, Fattovich, Manzo *et al.* (1997), Contenson (1963), Fattovich, Bard, Petrassi *et al.* (2000), Michels (2005), Munro-Hay (1989a), Peacock and Blue (2007), Phillipson (1995, 2000).

<sup>300</sup> Hahn (2005) examines the difficulty of estimating the numbers of Aksumite coins currently in private and museum collections and points among other important factors to the impact of movement of antiquities during the Second World War (62-3) and the inaccessibility of the collection in the Addis Ababa Museum (64). Pankhurst (1999) details the looting which resulted in the loss of Ethiopian cultural heritage between 1936 and 1941. Zazzaro (2009) 49-50 examines the problems tracing museum collections due to movement or loss in recent decades. Peacock and Blue (2007) 1 outlines the more recent disruption to excavation owing to warfare and its aftermath, including uncleared landmines.

site of Matara, and Adulis. Settlement surveys have also been conducted which have yielded important insights into the structure of the empire.<sup>301</sup> The increasing clarity of ceramic typologies has also been significant in revealing the economic systems of the empire.<sup>302</sup>

In addition to material remains, two categories of literary evidence provide distinct pictures of Aksum in the fourth to seventh centuries. The first are those of the Roman world, in particular the writings of Prokopios of Caesarea and the evidence of the *Christian Topography*. The other source, which has increasingly become accessible to research owing to the efforts of epigraphers, especially since the 1970s, is the large body of inscriptions left by inhabitants of the Aksumite Empire in Greek, Sabean and Ge'ez.<sup>303</sup> While the inscriptional culture of Aksum was known from the Roman literary sources, especially the translation of the Aksum *stele* by the author of the *Christian Topography*, the availability of transcriptions and translations of multiple minor and broken inscriptions has provided far greater information about the kingdom of Aksum.

Mediterranean texts dealing with Ethiopia begin with Herodotos, where five references to the land south of Egypt and inhabited by black Africans are to be found. This understanding of Ethiopia is common to almost all classical texts and throughout Late Antiquity.<sup>304</sup> References specifically to Aksum, or to locations along the coast of east

---

<sup>301</sup> Michels (2005).

<sup>302</sup> Smith and Wright (1988) on the ceramics from Ras Hafun in Somalia contributed significantly to the identification of ceramic types from east African coastal sites.

<sup>303</sup> Bernand, Drewes, Schneider *et al.* (2000) provide the fullest publication of the inscriptional evidence for Aksumite and pre-Aksumite Ethiopia/Eritrea. Robin (2012) provides a detailed list of inscriptional sources and literary mentions of Aksum (311-20), including later Arabic references to the kingdom.

<sup>304</sup> Robin (2012) 254.

Africa, which were or became part of the Aksumite Empire are less common.<sup>305</sup> In attempting to reconstruct the economic role of Aksum (and proto-Aksumite society) in the Indian Ocean trade, the testimony of the *Periplus of the Erythreian Sea* and the accounts of Prokopios of Caesarea and of the *Christian Topography* provide the most detailed and compelling information. How this data stands against material deriving from the east African coast itself, however, is another matter. The *Periplus of the Erythreian Sea* apparently pre-dates the assertion of Aksumite authority over the coastal port of Adulis but it does contain a description of this port and a reference to its relationship with the inland centre:

Μετὰ δὲ τὴν Πτολεμαΐδα τὴν τῶν θηπῶν ἀπὸ σταδίων ὡς τρισξιλίων ἐμπόριόν ἐστὶν νόμμον ἢ Ἄδουλι, κείμενον ἐν κόλπῳ βαθεῖ κατ' αὐτὸν τὸν ὅτον, οὗ πρὸς]κεῖται νῆσος Ὀρεινὴ λεγομένη, τοῦ μὲν ἐσωτάτου κόλπου σταδίου ὡς εἰς πέλαγος ἔχουσα διακοσίους, ἐξ ἀμφοτέρων <δὲ> τῶν μερῶν παρακειμένην ἔχουσα τὴν ἡπειρον, ἐν ἣ νῦν ὄρμει τὰ καταγόμενα πλοῖα διὰ τὰς ἐκ τῆς γῆς καταδρομάς. Πρῶτον μὲν γὰρ ὄρμει κατ' αὐτὸν τὸν ἰζώτατον κόλπον ἐν τῇ Διδώρου λεγομένη νήσῳ παρ' αὐτὴν τὴν ἡπειρον, ἐχούση πεζῆ τὴν διάβασιν, δι' ἣς οἱ κατοικοῦντες Βάρβαροι κατέτρεχον τὴν νῆσον. Καὶ κατ' αὐτὴν τὴν ἐν τῇ Ὀρεινῇ ἡπειρον ἀπὸ σταδίων εἴκοσι τῆς θαλάσσης ἐστὶν ἢ Ἄδουλι, κόμη σύμμετρος, ἀφ' ἣς εἰς μὲν Κολόνη μεσόγειον πόλιν καὶ πρῶτον ἐμπόριον τοῦ ἐλέφαντος ὁδὸς ἐστὶν ἡμερῶν τριῶν· ἀπὸ δὲ ταύτης εἰς αὐτὴν τὴν μητρόπολιν τὸν Ἀξωμίτην λεγόμενον ἄλλων ἡμερῶν πέντε, εἰς ὃν ὁ πᾶς ἐλέφας ἀπὸ τοῦ πέρα<v> τοῦ Νείλου φέρεται διὰ τοῦ λεγομένου Κυηνείου, ἐκεῖθεν δὲ εἰς Ἄδουλι. Τὸ μὲν οὖν ὅλον πλῆθος τῶν φονευομένων ἐλεφάντων καὶ ῥινοκερώτων περὶ τοὺς ἄνω νέμεται τόπους, σπανίως δὲ ποτε καὶ ἐν τῷ παρὰ θάλασσαν περὶ αὐτὴν τὴν Ἄδουλι θεωποῦνται. Πρόκεινται δὲ τοῦ ἐμπορίου καὶ κατὰ πέλαγος ἐκ δεξιῶν ἄλλαι νῆσοι μικραὶ ἄμμιναι πλείοντες, Ἀλαλαίου λεγόμεναι, χελώνην ἔχουσαι τὴν εἰς τὸ ἐμπόριον φερομένην ἀπὸ τῶν Ἰχθυοφάγων.<sup>306</sup>

<sup>305</sup> To complicate matters Ethiopia was not consistently used to refer to this region. Later classical authors in both Greek and Latin began from the fourth century to use 'India' to refer largely interchangeably to India and Ethiopia, sometimes differentiating by the use of spatial adjectives such as *ulterior*, explored by Mayerson (1993).

<sup>306</sup> *Periplus* chapter 4 'About 3000 stades beyond Ptolemais Thêrôn is a legally limited port of trade, Adulis. It is on a deep bay extending due south, in front of which lies an island called Oreinë ["hilly"] that is situated about 200 stades from the innermost part of the bay towards the open sea and, on both sides, lies parallel to the coast; here at the present time arriving vessels moor because of raids from the mainland. Formerly they used to moor at the very outermost part of the bay at the island, called Didôros Island, right by this part of the coast; there is a ford crossing to it by which the Barbaroi dwelling roundabout used to overrun the island. On this part of the coast, opposite Oreinë, 20 stades in from the sea is Adulis, a fair-sized village.



As one of only three substantial mentions of the east African coast and one of only two texts to refer to the port of Adulis, this text deserves close analysis. There are a number of features which in light of subsequent analysis of the archaeological and numismatic record of the Aksumite realm are highly suggestive. The reference to Adulis in the *Periplus of the Erythreian Sea* has played a significant role in shaping the archaeology of the site, especially in guiding excavators to the importance of its pre-Aksumite levels.<sup>307</sup> Nevertheless, the text is clear that the settlement is, in fact, a ‘fair-sized village’ and does not mention any infrastructure beyond the settlement. All notes about the harbourage there reflect natural conditions. The definition of ἐμπόριον νόμμον has been extensively debated in Indian Ocean studies with early commentators seeing such a port as one with strict and defined terms of trade with other powers, though modern consensus has tended more to the view that the term simply denotes a port at which local authorities (however defined) sought to exert control and at which law and safe conditions, rather than brigandage, applied.<sup>308</sup>

Certainly, this study cannot resolve a difficulty which has engaged philologists for so long, but it may be suggested that in the specific case of Adulis, no government involvement with the port is mentioned. Nor are port authorities of any sort. The presence of hostile locals at the site is referred to in the past tense, suggesting that the port had

---

From Adulis it is a journey of three days to Koloê, an inland city that is the first trading post for ivory, and from there another five days to the metropolis itself, which is called Axômitês [Axum]; into it is brought all the ivory from beyond the Nile through what is called Kyêneion, and from there down to Adulis. The mass of elephants and rhinoceroses that are slaughtered all inhabit the upland regions, although on rare occasions they are also seen along the shore around Adulis itself. In front of the port of trade, that is, towards the open sea, on the right are a number of other islands, small and sandy, called Alalaiu; these furnish the tortoise shell that is brought to the port of trade by the Ichthyophagoi.’

<sup>307</sup> Peacock and Blue (2007) 2-3.

<sup>308</sup> ἐμπόριον = emporium, place of trade, commercial site; νόμμον = is a unique occurrence in this text, and assumed to derive from νόμος, meaning law, custom, matters pertaining to law. Translations therefore include permutations such as ‘legal port’, ‘regulated port’, ‘port in law’; Casson (1989) 271-2.

become safer in recent times, but no information is provided about how this had been achieved. The relationship of Adulis to inland urban sites is dealt with (like so many things in this enigmatic text) in far less detail than might be ideal. As the archaeological analysis reflects, however, it does seem to sketch out a ‘corridor’ of exchange stretching inland first to an urban centre called Koloe (possibly Matara), thence to Aksum. While it is made clear that ivory moved along this route from the inland to the coastal port, no other link between the cities and the port is alluded to, either in the form of tribute/taxation or resources (human or material) coming from the cities. In particular, there is no mention made of security offered at the port, which may be expected to have come from the cities. In short, while the account in the *Periplus of the Erythreian Sea* has often been used to assert the significance of Adulis as a major port, there is little in this text which can confidently be extrapolated to generate an image of infrastructural development or control. There is no evidence, in this text or elsewhere, for complex polities along the east African coast in the pre-Aksumite period, which might have controlled the port.

Archaeologically, there have been various investigations of a site identified at an early stage as the likely location of Adulis, and which now appears indeed to be the ancient port, though there has been some debate about alternative locations.<sup>309</sup> Changes in the coastline, which mean that the main site of Adulis now lies 7 km from the coast rather than the 3.3 km mentioned by the author of the *Periplus of the Erythreian Sea*, and which make it impossible currently to verify the existence of an island mentioned in the text, have complicated identification. The most extensive survey of the site and its surrounding area, conducted from 2004 to 2006, demonstrated that a silted river channel may have

---

<sup>309</sup> Peacock and Blue (2007) 2-5.

connected the site to the coast in antiquity and identified the site of Gabaza as a candidate for the coastal port attached to the main settlement. For the early (pre-third-century) phases of the site, ceramic evidence confirms the impression given by the *Periplus of the Erythreian Sea* that it was a commercial location connected by maritime routes to India and to the Mediterranean. Nevertheless few architectural structures have been discovered to indicate a built environment and the small finds indicate that the site increased in importance into Late Antiquity.<sup>310</sup>

One further mention of Adulis is made in the *Periplus of the Erythreian Sea*. This makes reference to the use of cut pieces of brass prior to the import of Roman coins for use at the site.

Προχωρεῖ δὲ εἰς τοὺς τόπους τούτους ἱμάτια Βαρβαρικὰ ἀγναφα τὰ ἐν Αἰγύπτῳ γινόμενα, Ἀρσινοϊτικαὶ στολαὶ καὶ ἀβόλλαι νόθοι χρωμάτινοι καὶ λέντια καὶ δικρόσσια καὶ λιθίας ὑ<a>λῆς πλείοντα γένη καὶ ἄλλης μορρίνης τῆς γινομένης ἐν Διοσπόλει, καὶ ὠρόχαλκος, ᾧ χρῶνται πρὸς κόσμον καὶ εἰς θυγκοπήν ἀντὶ νομίσματος, καὶ μελίεφθα χαλκᾶ εἷς τε ἔψησιν καὶ εἰς συγκοπήν ψελίων καὶ περισκελίδων τισὶν τῶν γυναικῶν καὶ σίδηρος ὁ δαπανώμενος εἷς τε λόγχας πρὸς τοὺς ἐλέφαντας καὶ τὰ ἄλλα θηρία καὶ τοὺς πολέμους. Ὅμοίως δὲ καὶ πελύκια προχωρεῖ καὶ σκέπαρνα καὶ μάκαιραι καὶ ποτήρια χαλκᾶ στρογγύλα μεγάλα καὶ δηνάριον ὀλίγον πρὸς τοὺς ἐπιδημοῦντας καὶ οἶνος Λαδικηνὸς καὶ Ἰταλικὸς οὐ πολὺς καὶ ἔλαιον οὐ πολὺ· τῷ δὲ βασιλεῖ ἀργυρώματα καὶ χρυσώματα τοπικῶ ῥυθμῶ κατεσκευασμένα καὶ ἱματίων ἀβόλλαι καὶ γαννάκα ἀπλοῖ, οὐ πολλοῦ δὲ ταῦτα.<sup>311</sup>

<sup>310</sup> Peacock and Blue (2007) 7-17 detail previous exploration of the site, including speculation about other locations for the port.

<sup>311</sup> *Periplus* chapter 6 ‘In this area there is a market for: articles of clothing for the Barbaroi, unused, the kind produced in Egypt; wraps from Arsinoe; coloured *abollai* [cloaks] of printed fabric; linens; double-fringed items; numerous types of glass stones and also of millefiori glass of the kind produced in Diospolis; brass, which they use for ornaments as well as for cutting up into armlets and anklets for certain of the women; iron which is expended on spears for elephants and the other wild animals as well as for war. Likewise there is also a market for: axes, adzes, knives; large round copper drinking vessels; a little Roman money for the resident foreigners; wine of Laodicea and Italy, limited quantity; olive oil, limited quantity’.

This finds little support in the archaeological record: finds of early Roman coins at the site are few and no plausible alternatives in the form of cut pieces of metal suggest a local, un-minted alternative prior to the introduction of Aksumite coinage in the third century.<sup>312</sup>

By the sixth century, however, the status of the port of Adulis and its relationship to Aksum had clearly changed. The next major account of Aksum from the Byzantine Empire comes from the *Christian Topography*. It appears in the second book, is stated to be a personal account by the author and begins by emphasising the commercial role of Ethiopia and the port of Adulis:

Ἔστι δὲ ἡ χώρα ἢ λιβανωτοφόρος εἰς τὰ ἄκρα τῆς Αἰθιοπίας, μεσόγειος μὲν οὔσα, τὸν δὲ Ὠκεανὸν ἐπέκεινα ἔχουσα, ὅθεν καὶ οἱ τὴν Βαρβαρίαν οἰκοῦντες, ὡς ἐγγύθεν ὄντες, ἀνερχόμενοι εἰς τὰ μεσόγεια καὶ πραγματευόμενοι κομίζουσιν ἐξ αὐτῶν τὰ πλεῖστα τῶν ἡδυσμάτων, λίβανον, κασίαν, κάλαμον καὶ ἕτερα πολλά, καὶ αὐτὰ πάλιν διὰ θαλάσσης κομίζουσιν ἐν τῇ Αδούλῃ καὶ ἐν τῷ Ὀμηρίτῃ καὶ ἐν τῇ ἐσωτέρῃ Ἰνδία καὶ ἐν τῇ Περσίδι.<sup>313</sup>

The location of the empire at the centre of various trade routes is emphasised by the routes upon which the author dwells. These include routes to Arabia and the Yemen as well as ‘interior India’, a term which Mayerson points out covers the entire Indian subcontinent, Sri Lanka and China in the author’s writing.<sup>314</sup> The description of Aksum is a somewhat eclectic tangent by the author on the subject of his travels, however, and deals not just with the economic role of the empire. It includes, for example, a translation of the Ptolemaic

<sup>312</sup> Phillipson (2009) 361.

<sup>313</sup> *Christian Topography* Book 2, chapter 49. ‘This is the frankincense-bearing place in the highlands of Ethiopia, lying inland, having the ocean beyond, when also the inhabitants of Barbaria, being nearby, having arrived inland and having done business, they provide most things for seasoning, frankincense, cassia, reeds and many other things, and these things again by sea they provide in Adulis and among the Homerites and in outer India and in Persia’.

<sup>314</sup> Mayerson (1993) 170.

inscription from Aksum, which records the military strength of the kingdom in the proto-Aksumite period.

Βασιλεὺς μέγας Πτολεμαῖος... παραλαβὼν παρὰ τοῦ πατρὸς τὴν βασιλείαν Αἰγύπτου καὶ Λιβύης καὶ Ζυρίας καὶ Φοινίκης καὶ Κύπρου καὶ Λυκίας καὶ Καρίας καὶ τῶν Κυκλάδων νήσων ἐξεστράτευσεν εἰς τὴν Ἀσίαν μετὰ δυνάμεως πεζικῶν καὶ ἵπικῶν καὶ ναυτικοῦ στόλου καὶ ἐλεφάντων τρωγλοδυτικῶν καὶ αἰθιοπικῶν, οὓς ὁ τε πατήρ αὐτοῦ καὶ αὐτὸς πρῶτος ἐκ τῶν χώρων τούτων ἐθήρευσαν καὶ καταγαγόντες εἰς Αἴγυπτον κατεσκεύασαν πολεμικὴν χρεῖαν. Κυριεύσας δὲ τῆς τε ἐντὸς Εὐφράτου χώρας πάσης, καὶ Κιλικίας καὶ Παμφυλίας καὶ Ἰωνίας καὶ τοῦ Ἑλλησπόντου καὶ Θράκης καὶ τῶν δυνάμεων τῶν ἐν ταῖς χώραις ταύταις πασῶν καὶ ἐλεφάντων ἰνδικῶν, καὶ τοὺς μονάρχους τοὺς ἐν τοῖς τόποις πάντας ὑπηκόους καταστήσας, διέβη τὸν Εὐφράτην ποταμὸν καὶ, τὴν Μεσοποταμίαν καὶ Βαβυλωνίαν καὶ Σουσιάνην καὶ Περσίδα καὶ Μηδεῖαν καὶ τὴν λοιπὴν πᾶσαν ἕως Βακτριανῆς...<sup>315</sup>

The development of the west coast of the Red Sea by the Ptolemies has received some attention, and textual and archaeological indications suggest that a maritime connection was generated primarily in order to source war elephants. Only later was the same infrastructure turned to long-distance trade.<sup>316</sup> In continuity with later policy by the state of Aksum, however, the importance to the state of warfare with neighbours and the acquisition of tribute is clear. A further mention is made of Adulis later in Book Two of the *Christian Topography* with respect to neighbours of the Aksumite Empire and their religious practices:

Πάντα δὲ ταῦτα τὰ ἔθνη πρῶτος καὶ μόνος Βασιλέων τῶν πρὸ ἐμοῦ ὑπέταξα, δι' ἣν ἔχω πρὸς τὸν μέγιστον θεὸν μου Ἄρην εὐχαριστίαν, ὅς με καὶ ἐγέννησε, δι' οὗ

<sup>315</sup> *Christian Topography* Book Two, chapters 58-9. 'Great king Ptolemy...receiving from his father the kingdom of Egypt and Libya and Syria and Phoenicia and Cyprus and the Cycladic islands, marched in strength into Asia with infantry and horses and shipping equipment and troglodytic and Ethiopian elephants – his father and especially he hunting in these countries and transporting them into Egypt, furnished them for the needs of war. Having become lord of the whole area of the Euphrates and Cilicia and Pamphylia and Ionia and the Hellespont and Thrace and all of the armed forces of these lands as well as Indian elephants, and having set down the monarchs of all of these places, he crossed the River Euphrates into Mesopotamia and Babylonia and Sousiana and Persia and Media and all that remained up to Bactria'.

<sup>316</sup> Phillips (1997) 445-6, Seland (2009) 183-4.

πάντα τὰ ἔθνη τὰ ὀμοροῦντα τῇ ἐμῇ γῆ ἀπὸ μὲν ἀνατολῆς μέχρι τῆς λιβανωτοφόρου, ἀπὸ δὲ δύσεως μέχρι τῶν τῆς Αἰθιοπίας καὶ Ζάσου τόπων, ὑπ' ἐμαυτὸν ἐποίησα, ἃ μὲν αὐτὸς ἐγὼ ἐλθὼν καὶ νικήσας, ἃ δὲ διαπεμπόμενος, καὶ ἐν εἰρήνῃ καταστήσας πάντα τὸν ὑπ' ἐμοὶ κόσμον καψῆλθον εἰς τὴν Ἀδούλι τῷ Διὶ καὶ τῷ Ἄρει καὶ τῷ Ποσειδῶνι θυσιάσαι.<sup>317</sup>

Relations with surrounding groups therefore appear to have been maintained by warfare though peaceful dominance was the position publicly sought by Aksum's monarchs. Relations were also economic, however, and the author refers to the strange practice of gold trading with people to the south of Aksum, the previously mentioned Sasou, who are described as bringing gold to a pre-arranged place of meeting and leaving it on the ground before withdrawing. Aksumite traders would then bring out meat and other foodstuffs and leave these beside the gold, before also withdrawing. Sasou traders would return, inspect the goods of trade then either take the Aksumite products and depart, alter the quantity of gold, or remove the gold entirely.<sup>318</sup>

This is of particular interest for two reasons. It has long been accepted that it is unlikely to have been the true practice of the peoples living in the region. Nevertheless, as Phillipson pointed out, the basic structure of this exchange – meat and other food products for gold – is likely to reflect a real trading relationship.<sup>319</sup> First, this account reflects the inland trading networks, which are deeply under-represented in the study of pre-modern economies of the region owing to their intangibility in the archaeological record and the

---

<sup>317</sup> *Christian Topography* Book Two, chapter 63. 'All of these people are subject first to me alone as king, for which I give thanks to my greatest God, Ares, he who also begot me, wherefore all the people that border with my land, from the east to the frankincense-bearing land, from the west to Ethiopia and the lands of the Sasou have been brought beneath me; having established peace in the entire world before me I went down to Adulis to make sacrifices to Zeus and Ares, and also Poseidon.'

<sup>318</sup> *Christian Topography* Book Two, chapters 51-2.

<sup>319</sup> Phillipson (1998) 58.

lack of a narrative historical record.<sup>320</sup> It appears that this trade may have played a significant role in the economy of Aksum if this represented one of the sources of gold which sustained the production of currency and elite wealth. Second, it demonstrates the extent to which Aksum's prosperity, divorced momentarily from the ubiquity of Roman priorities (ivory, spices and all things Indian or thought to be Indian) may have relied far more upon agrarian products and thriving networks of local trade.<sup>321</sup> Phillipson also highlights the importance of ivory both for the internal and the long-distance trade routes of the Aksumite state.<sup>322</sup>

The final text worthy of close investigation is the account of Prokopios of Caesarea, dealing in particular with a diplomatic mission from the Roman state to Ethiopia and to the Himyarites of southern Arabia. In common with the *Christian Topography*, and in contrast to the author of the *Periplus*, Prokopios is certainly writing about a state with significant political structures, a military reputation and sufficient economic impact to be approached about by-passing the Sasanian state in the silk trade with the Roman Empire:

Τότε δὲ Ἰουστινιανὸς [ὁ βασιλεὺς ἐν μὲν Αἰθίοψι βασιλεύοντος Ἑλλησθεαίου, Ἐσιμφαιίου δὲ ἐν Ὀμηρίταις, πρεσβευτὴν Ἰουλιανὸν ἔπεμψεν, ἀξιῶν ἄμφω Ῥωμαίοις διὰ τὸ τῆς δόξης ὁμόγνωμον Πέρσαις πολεμοῦσι ξυνάρασθαι, ὅπως Αἰθίοπες μὲν ὠνούμενοιτε τὴν μέταξαν ἐξ Ἰνδῶν ἀποδιδόμενοι τε αὐτὴν ἐς Ῥωμαίους, αὐτοὶ μὲν κύριοι ψενωνται χρημάτων μεγάλων, Ῥωμαίους δὲ τοῦτο ποιήσωσι κερδαίνειν μόνον, ὅτι δὲ οὐκέτι ἀναγκασθήσονται τὰ σφέτερα αὐτῶν χρύματα ἐς τοὺς πολεμίους μετενεγκεῖν (αὕτη δὲ ἐστὶν ἡ μέταξα ἐξ ἧς εἰώθησιν τὴν ἐσθῆτα ἐργάζεσθαι ἦν πάλαι μὲν Ἕλληνες Μηδικὴν ἐκάλουν, τανῦν δὲ σηρικὴν ὀνομάζουσιν), Ὀμηρίται δὲ ὅπως Καῖσὸν τὸν φυγάδα φύλαρχον Μαδδηνοῖς καταστήσωσιν καὶ στρατῶ μεγάλῳ αὐτῶν τε Ὀμηριτῶν καὶ Σαρακηνῶν τῶν Μαδδηνῶν ἐσβάλωσιν ἐς τὴν Περσῶν γῆν. (ὁ δὲ Καῖσὸς οὗτος γένους μὲν ἦν τοῦ φυλαρχικοῦ καὶ διαφερόντως ἀγαθος τὰ πολέμια, τῶν δὲ τινα Ἐσιμφαιίου

<sup>320</sup> Phillips (1997) 455.

<sup>321</sup> Phillipson (2009) 356-7. On gold working at Aksum: Phillipson 2006. On agriculture and local trade networks see especially Sernicola and Phillipson (2011), Sulas, Madella and French (2009), Sutton (2008).

<sup>322</sup> Phillipson (1995) 16-22, (2009) 357-60.

ξυγγενῶν κτείνας ἐς γῆν ἔφευγεν ἢ δὴ ἔρημος ἀνθρώπων παντάπασιν ἐστίν.) ἐκάτερος μὲν οὖν τὴν αἴτησιν ὑποσχόμενος ἐπιτελῆ ποιήσιν τὸν πρεσβευτὴν ἀπεπέμψατο, ἔδρασε δὲ αὐτοῖν τὰ ὠμολογημένα οὐδέτερος. τοῖς τε γὰρ Αἰθίοψι τὴν μέταξαν ὠνεῖσθαι πρὸς τῶν Ἰνδῶν νῆες καταίρουσιν, ἅτε χῶραν προσοικοῦντες τὴν ὄμορον, ἅπαντα ὠνεῖσθαι τὰ φορτία εἰώθασι, καὶ τοῖς Ὅμηρίταις χαλεπὸν ἔδοξεν ἀμειψαμένοις ἔρημόν τε καὶ χρόνου πολλοῦ ὁδὸν κατατείνουσαν ἐπ' ἀνθρώπους πολλῶ μαχιμωτέρους ἰέναι.<sup>323</sup>

Prokopios' account of the embassy provides greater detail concerning the Aksumite state.

In particular it notes that through its Himyarite possessions Aksum formed a significant military ally capable of diverting Persian attention to the Arabian Peninsula. The account that Aksum should buy silk from the Indians in order that the Roman Empire should no longer have to buy it from the Persians is often used to argue for the strategic economic role of the Aksumites in the Indian Ocean trade.<sup>324</sup> An entirely opposite interpretation is, however, possible: Prokopios' account in fact suggests that the Roman Empire was long accustomed to buying its silk from the Persians. The fact that they felt compelled to do so in order to acquire fabrics which had increasing importance in courtly representation strongly implies that there were no alternative viable sources for the product.<sup>325</sup> The necessary corollary of this is that Aksum was not a significant partner in Indian trade, at

---

<sup>323</sup> Prokopios *History of the Wars*, Book 1, 20.9-12 'At that time, when Hellestheaus was reigning over the Aethiophians, and Esimiphaeus over the Homeritae, the Emperor Justinian sent an ambassador, Julianus, demanding that both nations on account of their community of religion should make common cause with the Romans in the war against the Persians; for he purposed that the Aethiophians by purchasing silk from India and selling it among the Romans, might themselves gain much money, while causing the Romans to profit in only one way, namely, that they be no longer compelled to pay over their money to their enemy. (This is the silk of which they are accustomed to make the garments which of old the Greeks called Medic, but which at the present time they name "seric"). As for the Homeritae, it was desired that they should establish Caisus, the fugitive, as captain over the Maddeni, and with a great army of their own people and of the Maddene Saracens make an invasion into the land of the Persians. This Caisus was by birth of the captain's rank and an exceptionally able warrior, but he had killed one of the relatives of Esimiphaeus and was a fugitive in a land which is utterly destitute of human habitation. So each king, promising to put this demand into effect, dismissed the ambassador, but neither one of them did the things agreed upon by them. For it was impossible for the Aethiophians to buy silk from the Indians, for the Persian merchants always locate themselves at the very harbours where the Indian ships first put in (since they inhabit the adjoining country), and are accustomed to buy the whole cargoes; and it seemed to the Homeritae a difficult thing to cross a country which was a desert and which extended so far that a long time was required to cross, and then to go against a people much more warlike than themselves'.

<sup>324</sup> Hudson (1931) 104, Nappo (2009) 76.

<sup>325</sup> Muthesius (2003) 326-7.



least in silks. Such trade would be a new departure for them, a contention supported by their apparently absolute failure to achieve this: Aksum could not infiltrate itself into existing trading relations which were exclusively (or at least substantially) dominated by Indian and Persian networks. For understanding the role of Aksum in the Late Antique world, and especially in relation to the Roman state, the themes which emerge from this account are those which recur throughout this thesis: the centrality and importance to Late Antique states of diplomacy, prestige and military strength, and the willingness to benefit from or extract surplus from trade when convenient. The fact that this request to Aksum to involve itself in trade occurred at a time of war further underlines the order of priorities which occupied Late Antique states.

If the foreign sources dealing with Aksum do not necessarily support the idea that trade played a ubiquitous role in the creation and identity of the state, sources from Aksum itself even more clearly point away from such a notion. The epigraphy of Aksum yields a striking picture of a Late Antique polity the priorities of which would be entirely unsurprising were Aksum's historiography not so entrenched in the idea of it as a commercial empire. The epigraphy makes little or no mention of commercial enterprise. Almost all surviving inscriptions concern the military defeat of neighbouring peoples or rebels. The only reference to trade, indeed, consists in mentioning that some of these rebels incurred the wrath of the Aksumite state in part by attacking merchant caravan trains.<sup>326</sup> Above all, epigraphy focuses on the acquisition of booty by the Aksumite monarchs from their defeated enemies. The author of the *Christian Topography* records, for example, in addition to the Ptolemaic inscription, the royal inscription on the back of the throne in

---

<sup>326</sup> Sergew (1972) 94.

Adulis, which records the various people against whom the king made war and the tribute extracted from them, which included young people, women, children and unspecified goods.<sup>327</sup> Religion also seems to have been a preoccupation of royal authority. Offers of thanks to divine powers usually accompany records of successful military ventures, as do records of the gifts lavished upon such gods.<sup>328</sup>

It is, of course, entirely likely that the output of epigraphy in Aksum was closely regulated by what was considered appropriate for public inscription. Many areas of the life of the empire undoubtedly did not find themselves carved in stone, and this could have applied to maritime commerce. Nevertheless, three features of the surviving epigraphy bear further study from the perspective of the economic history of the Aksumite Empire. These are, first, the almost complete absence of the sea as anything other than a transitional space between the realms of the empire. Ports are rarely referenced as sites which are to be contested or defended. In the inscription on the throne of Adulis (above), for example, it is recorded that the people of Solate were ordered to defend the sea beaches. The maritime space in this text is, therefore, primarily conceived of as a martial rather than a commercial environment.

It is also significant that according to epigraphic records, Aksumite expansion did not take place only in the Arabian Peninsula, with its obvious implications for Indian Ocean trade. There were also campaigns against Meroe and probably against other inland territories, the exact location of which cannot be gauged. The titles of Aksumite monarchs list the various territories of which they were rulers or from which they drew tribute and

---

<sup>327</sup> *Christian Topography* Book Two, chapters 60-1.

<sup>328</sup> Sergew (1972) 89, 105-6, 123-4, 136.

many of these seem to lie inland from Aksum. A pre-Christian inscription of Ezana, for example, opens:

Ezana, the son of Ella 'Amida of the family of Halen, King of Aksum, and of Hemer (Himyar), and of Raydan, and of Sab' and of Salhen, and of Seyamo, and of Bega, and of Kasu, the son of Mahram, who cannot be conquered by the enemy.<sup>329</sup>

The later Christian inscription of the same monarch lists his lands and tributary neighbours thus:

Aezanas king of Aksum and of the Homeritae and of Reidan and of the Sabaeans and of Salchel and of Chaso (Kasu) and of Bougeit[ae] and of Tiamo, Bisi Alene, son of Elle A [lami]d [a] [so]n of Christ. I thank the Lord my God.<sup>330</sup>

This further suggests a state not built on trade and controlling the Gulf of Aden, but rather a state which expanded opportunistically and ubiquitously when its neighbours were weak. In this respect it appears strikingly similar to the picture of the Sasanian Persian Empire as represented in the rock carvings at Naqsh-i Rostam, discussed in chapter six.

Following the royal titlature, the royal inscriptions of Aksum routinely detail the plunder gained from enemies in combat. In the pre-Christian inscription of Ezana, it is recorded that,

they killed, and made prisoners, and despoiled them. And we attacked Sa'ne, and Sawante, and Gema, and Zahtan, four peoples (or, tribes), and we took prisoner 'Alîta with his two children. And a slaughter took place, of the men of 'Afan. 503, and women 202, in all 705. Of his camp-followers there were taken prisoners, men

---

<sup>329</sup> Sergew (1972) 93, 64-9 discussed the historical geography of Aksum's territories and hinterlands insofar as these can be established.

<sup>330</sup> Sergew (1972) 103.

40, and women and children 165, in all 205. As spoil we carried off 31,900 and 57 cattle, baggage animals 827.<sup>331</sup>

This suggests that such confiscation of personnel and, above all, livestock constituted a major economic function of royal wars. Aksum appears to have been an aggressive power, with a military employed to regulate its imperial standing. Had the primary economic pillar of the empire been commercial we might expect a greater emphasis on such trade among the functions of the military for purposes of protection and regulation. Rufinus' account of the conversion of the Aksumite kingdom by Frumentius (supposedly based on the first-hand account of Frumentius' brother Aedesius) is also interesting for a variety of reasons which all combine to reflect the non-commercial interactions of Aksum with the Roman world:

Cuius exemplo etiam invitatus Meropius quidam Tyrius philosophus simili ex causa adire Indiam voluit, habens secum duos puerulos, quos liberalibus litteris utpote propinquos instituebat. Quorum unus qui erat junior Edesius, alter Frumentius vocabatur. Igitur pervisis, et in notitiam captis his quibus animus pascebatur, cum philosophus redire caepisset, aquae vel caeterorum necessariorum causa ad portum quondam navis, qua vehebatur applicuit. Moris est inibi Barbarorum, ut siquando foedusibi cum Romanis turbatum vicinae nuntiaverint gentes, omnes qui apud eos ex Romanis inventi fuerint iugulenitur. Invaditur navis philosophi: cuncti cum ipso partier perimuntur. Pueruli reperti sub arbore meditates, et lectiones suas parantes, Barbarorum miseratione servati, ducuntur ad regem. Horum ille alterum, id est, Edesium sibi pincernam fecit. Frumentio vero, quem quasi perspicacem deprehenderat et prudentem, rationes suas seriniaque commisit. Ex quo et in honore magno apud regem habiti, et in amore. At vero moriens rex, uxorem cum parvulo filio regni dereliquit haeredem: adolescentibus antem quid vellent, agenda dedit liberam facultatem. Quos tamen regina suppliciter exorat, tanquam quae nihil haberet in tot regno fidelius, ut secum, usquequo adolesceret filius, regendi regni sollicitudinem partirentur: et praecipue Frumentium, cuius prudentia ad moderandum sufficeret regnum. Nam alius fidem puram, et sobriam mentem simpliciter exhibebat. Idque duma gerent, et regni gubernacula Frumentius haberet in minimis, Deo mentem eius et animos instigante requirere sollicitius coepit si qui inter negociatores Romanos Christiani essent, et

---

<sup>331</sup> Sergew (1972) 94.

ipsis potestatem maximam dare, ac monere, ut conventiula per loca singulare facerent, ad quae Romano ritu orationis causa confluerent.<sup>332</sup>

The rest of the account records that after achieving adulthood Frumentius and Aedesius were moved to return to the Roman Empire, whence the patriarch of Alexandria sent Frumentius back to Aksum to organise a church there under the authority of Alexandria. Several features of the above narrative are worthy of note. First, Frumentius and his brother began their story on a voyage to trade in India (proper) as companions to a philosophical relative. The idea that Aksum may have functioned as a way-station for intellectual tourists, no doubt because of the commercial traffic passing through it, but adding a further dimension to a purely economic reconstruction of Aksumite relations with Rome and India is provided by the eleventh-century copy of a possibly fourth-century letter of the ‘Theban Scholasticus’ who journeyed to Aksum but ended up being transported to India as a prisoner.<sup>333</sup> Violence and the insecurity of travel is a theme which occurs in the account of Frumentius too: on this journey, having got as far as India (= Aksum), their travel companions are killed because of a breach in treaty with the Romans.

---

<sup>332</sup> Rufinus of Aquileia *Ecclesiastical History*, Book One, chapter 9: ‘In emulation, Meropius, a philosopher of Tyre in Phœnicia, journeyed as far as India. They say he was accompanied by two youths, named Frumentius and Edesius; they were his relatives; he conducted their rhetorical training, and educated them liberally. After exploring India as much as possible, he set out for home, and embarked in a vessel which was on the point of sailing for Egypt. It happened that, from want of water or some other necessary, the vessel was obliged to stop at some port, and the Indians rushed upon it and murdered all, Meropius included. These Indians had just thrown off their alliance with the Romans; they took the boys as living captives, because they pitied their youth, and conducted them to their king. He appointed the younger one his cup-bearer; the older, Frumentius, he put over his house and made him administrator of his treasures; for he perceived that he was intelligent and very capable in business. These youths served the king usefully and faithfully during a long course of years, and when he felt his end approaching, his son and wife surviving, he rewarded the good-will of the servants with liberty, and permitted them to go where they pleased. They were anxious to return to Tyre, where their relatives resided; but the king’s son being a minor, his mother besought them to remain for a little while and take charge of public affairs, until her son reached the years of manhood. They yielded to her entreaties, and directed the affairs of the kingdom and of the government of the Indies. Frumentius, by some Divine impulse, perhaps because God moved him spontaneously, inquired whether there were any Christians in India, or Romans among the merchants, who had sailed thither. Having succeeded in finding the objects of his inquiry, he summoned them into his presence, treated them with love and friendliness, and convened them for prayer, and the assembly was conducted after the Roman usage; and when he had built houses of prayer, he encouraged them to honor God continually’.

<sup>333</sup> Desanges (1969) on the text and its manuscript tradition. Duncan and Derrett (1962) on the fourth-century date of the likely original.

Such a precipitous and swift response to a disruption in diplomatic relations does not suggest a minor power whose prosperity depended upon providing a safe and regulated environment for merchants (and particularly for traders from and to the Roman Empire). Rather, it seems to reflect the same concerns with state prestige, diplomacy and military strength as exhibited by the Roman and Persian empires, and within which merchants and their safety and comfort might be of some concern due to tax revenues derived from trade, but who were also subordinate to the greater aims of military status. The reference to Frumentius' inquiry as to whether there might be Romans among the merchants who had sailed there is also suggestive. It is unclear from the text whether there were any among the Christians Frumentius gathered together, since he inquired after either local Christians or Roman merchants and found a congregation of unspecified origin, but it is in any case clear that Aksum's trade with the Roman Empire was not so significant that Frumentius (having spent most of his adolescence managing the affairs of the Aksumite Empire according to Rufinus' account) did not need to ask whether among the many merchants sailing thither there might be some Romans.

Third and finally, the epigraphic record of Aksum is not unusual in the Late Antique world. Indeed, it would be had it commemorated commerce and thriving trans-regional networks. In focussing on military competency, plunder won from enemies, and territorial expansion, it conforms with similar acts of public, state-driven memorialisation in the Roman and Persian worlds, the principal models of an imperial state which Aksum had to hand.<sup>334</sup> This is, of course, an argument which can be made both ways: either

---

<sup>334</sup> The rock carvings at Naqsh-e Rostam, detailing the provinces of the empire, celebrating military conquest and representing the bringing of tribute from subject regions are the clearest evidence for the public prioritisation of militarism, expansion and expansion in Persia (Back (1978) particularly 285-8). In the case

Aksum was a commercial state, whose prosperity was derived to a degree unusual in the pre-modern world from trade, but by seeking to model its imperial self-representation on the more traditional Roman and Persian states it did not reflect this in its epigraphy. Alternatively, the epigraphic concerns of the Aksumite kings are similar to those of Rome and Persia precisely because they, like their powerful neighbours (and to some extent perhaps modelled upon them), led a Late Antique polity with the same concerns with agriculture, military strength and territorial acquisition. Given what has already been demonstrated about the insecurity of many of the sources commonly used to support the image of Aksum as a trader-state, and the material evidence to be discussed below of its cultural independence, this study errs, in keeping with recent archaeological approaches to Aksum, on the side of the latter interpretation.

Two categories of archaeological exploration have significantly shaped recent understandings of the Aksumite state and economy. Excavations at key urban sites in Aksumite territory are supported by survey data on settlement distribution. The combined results of these explorations present an incomplete but increasingly compelling picture of a state supported by an agrarian economy, based around major inland sites. It appears that as this state increased in power and authority, it extended its hold towards the coast, eventually forming a link to the pre-existing port of Adulis. References to the port of Adulis in the *Periplus of the Erythreian Sea* describe goods being transported thence to inland city markets at Koloe and Aksum, but say nothing about the political relationship between the inland and coastal sites.<sup>335</sup> The extensive excavations at Aksumite sites published and synthesized by Phillipson indicate that only in the first century A.D. did the

---

of the Roman Empire, Colás (2007) 42 examines the importance of military expansion, tribute and taxation to the reality and representation of empire.

<sup>335</sup> *Periplus of the Erythreian Sea*, chapters 4 and 6.

inland pre-/proto-Aksumite culture begin to expand and develop its distinctive material culture, which may coincide with asserting greater control over the port of Adulis.<sup>336</sup> Certainly by the sixth century the references in the *Christian Topography* indicate that Adulis was understood to be the port of the kingdom of Aksum.<sup>337</sup> It is less clear, however, that this was primarily with the aim of growing the state as an organ of maritime commerce rather than the Aksumite state policy of expansion, which would at least briefly, in the reign of Kaleb, take the state across the Red Sea and into the Arabian Peninsula, and which motivated various expeditions highlighted above against inland neighbours.

The archaeological evidence for the production of goods manufactured for elites combined with the indigenous style of Aksumite architecture supports a picture of a state which was structured around the wealth-generating potential of its own artisanal production rather than external trade. It is clear that Aksum used the Roman Empire as a cultural reference point. The ivory carvings discovered in the Tomb of the Brick Arches in Aksum are evidently derived from classical models but produced in Aksum with local stylistic features.<sup>338</sup> The great stelae of Aksum illustrate a similar, if slightly earlier, tendency towards independence in material culture.<sup>339</sup>

Aksumite manuscript production remains a controversial topic insofar as it is widely held that manuscripts must have begun to be produced early in the Christian centuries of Aksum, but debate rages over whether any surviving examples can be dated

---

<sup>336</sup> Phillipson (2009) 474-5. Peacock and Blue (2007) 9.

<sup>337</sup> *Christian Topography*, Book 2, chapters 58-9, 63.

<sup>338</sup> Phillipson (1995) 6-22 includes a description and illustrations of ivory, metal and ceramic artefacts from the Tomb of the Brick Arches, emphasizing not only the wealth of the finds but also the extent to which indigenous design as well as Roman influence underpins the local high-quality production.

<sup>339</sup> Phillipson (1994), (2005) 230.



before the second millennium A.D. Heldman has made the argument that a gospel manuscript at the Abba Garima monastery is in fact sixth century.<sup>340</sup> Whether this dating is correct or not it suggests the plausibility of there having existed a manuscript tradition from at least the second half of the first millennium, which further supports the archaeological reconstruction of the Aksumite state. Namely, it seems likely that they were produced in Ge'ez and by local artisans. Again, the pattern of Aksumite elite cultural production is evident: this was a society influenced by a geographical position which exposed it to influences from north and east. For reasons presumably political, spatial and cultural, it came to be most significantly affected by the cultures of southern Arabia and ultimately, the Christian Roman Empire, but this was never a dependent culture. It produced the facilities for its own Christianization and appears to have had or developed an artisanal structure to provide for the needs of a stratified population including a wealthy elite.

---

<sup>340</sup> Heldman (1994).



Gospels, and Catalogue of books. Shoa, 1497-1508

**Fig. 4.4:** *A fifteenth-century century Ge'ez manuscript, open on the Gospel of Matthew.*<sup>341</sup>

The material evidence for the retreat of the Aksumite state from prominence on the Red Sea also suggests greater independence from the Red Sea trade than traditional interpretations allow. Numismatic and archaeological evidence indicate that the state retreated inland, abandoning its capital in the sixth to early seventh century.<sup>342</sup> With similar lack of specificity to the assertions that the Aksumites survived as middlemen in trade, the collapse of the sixth-seventh centuries is usually attributed to the shift of the Red Sea trade owing to war between Rome and Persia or to the rise of Muslim control of the

---

<sup>341</sup> Schøyen Collection MS 2850, <http://www.schoyencollection.com/smallercollect2.html#2850> (accessed 17/6/2013).

<sup>342</sup> Peacock and Blue (2007) 12, Phillipson (2000) 485-7.

Red Sea in the seventh century.<sup>343</sup> However evidence for changes in local climate and resource management have also been proposed as a factor in the decline of Aksum, as have repeated military setbacks related to controlling the Arabian Peninsula.<sup>344</sup> It is thus possible that the withdrawal and contraction of the Aksumite state may have been influenced by factors entirely unconnected to long-distance commerce. The disappearance of the Aksumite state, like the reasons for its rise to prominence, therefore remain unclear but cannot be assumed to have a commercial explanation on the basis of current evidence.

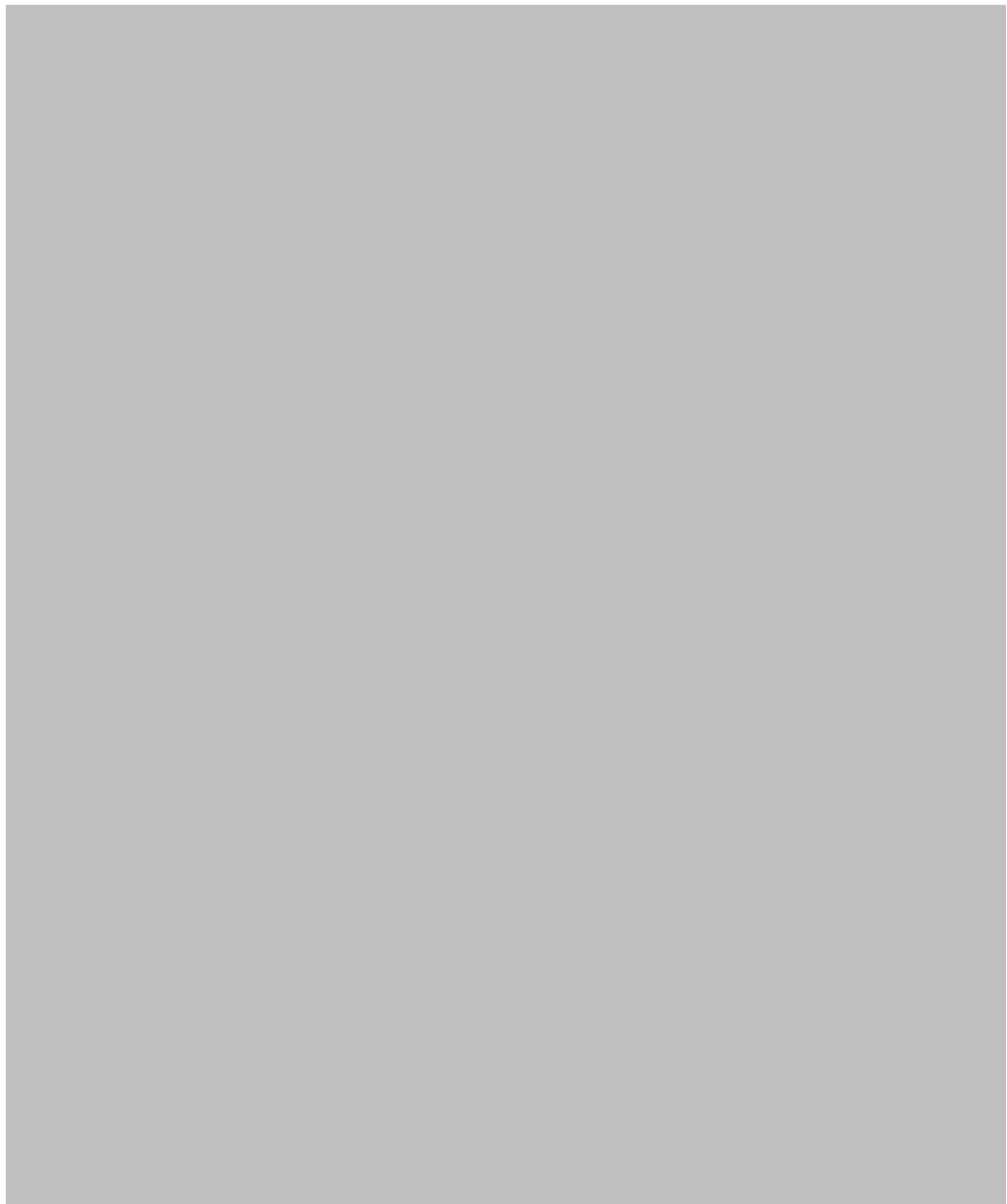
#### ***4.3a Revisiting the numismatic evidence***

Perhaps the most important body of evidence in most reconstructions of the Aksumite state prior to recent archaeological excavations has been numismatic. In light of the analysis of the Aksumite state above, this too is open to reinterpretation. Like the archaeological evidence for cultural self-confidence on the part of the Aksumite state, its currency represents confidence not dependence on Roman models. The circulation patterns indicated by coin finds are complex and raise more questions than they answer, but they do not automatically suggest circulation determined by long-distance foreign trade. The theory that Aksumite coinage was designed to a large extent with the aim of interacting with Roman coinage is also open to serious criticism based on the coinage *per se* and its patterns of discovery.

---

<sup>343</sup> Hahn (2010) 10, Munro-Hay (1991) 58, 260, Phillipson (2000) 485-6, (2005) 230.

<sup>344</sup> Butzer (1981).



**Fig. 4.5:** *Aksumite copper, silver and gold coins of Ezana (all post-conversion to Christianity).*<sup>345</sup>

Two features of Aksumite coinage are worthy of immediate and close attention. First, the production of gold coinage by the Aksumite state was a major statement and a departure from local and regional tradition. While minor coinages had existed in Nabataea

---

<sup>345</sup> Copper: [http://www.wildwinds.com/coins/greece/axum/ezana/s\\_BMC\\_90.jpg](http://www.wildwinds.com/coins/greece/axum/ezana/s_BMC_90.jpg), Silver: [http://www.wildwinds.com/coins/greece/axum/ezana/s\\_BMC\\_75.jpg](http://www.wildwinds.com/coins/greece/axum/ezana/s_BMC_75.jpg), Gold: [http://www.wildwinds.com/coins/greece/axum/ezana/s\\_BMC\\_75.1.jpg](http://www.wildwinds.com/coins/greece/axum/ezana/s_BMC_75.1.jpg) (all accessed 15/6/2013).

and southern Arabia, the two dominant currency domains of Aksum's contemporary world were the Sasanian Persian Empire, which issued silver coinage, and the Roman Empire.<sup>346</sup> The fierceness with which the Roman Empire defended its exclusive right to issue gold coinage is well known. Prokopios' sixth-century diatribe against Theudebert for placing himself on a gold coin, an affront to Roman imperial authority, demonstrates the political and social significance of such a gesture.<sup>347</sup> It is interesting to note in light of theories that Aksumite coinage was intended to interact with Roman currency that Aksumite coinage, which is not found in the Mediterranean and receives no mention in the Roman sources, leaving no textual or material evidence that the Roman Empire was aware of Aksumite coinage as a political or an economic statement.

Thus, the choice to mint gold coins was neither neutral nor necessarily well advised. If the Aksumite Empire had been close to the Roman state, the latter's proprietorial attitude towards gold minting should have generated caution and a possible awareness by Aksum of negative repercussions. If the Aksumite state did not know about these prohibitions it undermines the theory that the Aksumite Empire was politically and economically closely aligned with the Roman state. In the Indian Ocean trade one may have expected silver to be a more useful medium of exchange, enabling economic interaction with Persia.<sup>348</sup> In addition, minting gold coins required a source of gold, which it is clear that the Aksumite state possessed – a further caution against overstating the significance of external trade to the wealth and economic stratification of the empire. It

---

<sup>346</sup> Bowsher (1990) on Nabataean coinage. Potts (1991a, 1991b) on south Arabian coinage. Album and Gyselen (2003), Curtis, Askari and Pendleton (2010), Schindel (2004, 2012a, 2012b) on general Sasanian numismatics. Sears (2000, 2002, 2005, 2010) on Roman coins up to Constantine I. Prior to the Sasanian rise the Parthian lords of Mesopotamia had also used silver: Wroth (1903).

<sup>347</sup> Prokopios *History of the Wars*, Book 7, 33.

<sup>348</sup> Though see the case study in chapter six dealing with the lack of Persian coinage along the coast of the Indian Ocean.

should be borne in mind more often than is the case in current literature, which sees Aksumite coinage purely in terms of its reference to Rome, that Aksum was one of only three major powers in the early centuries of the Christian era to mint a substantial gold coinage, alongside Rome and the Kushans of northern India.<sup>349</sup>

The other feature of Aksumite coinage, which while self-evident has not received much attention in the literature, is its enormous sophistication. Aksum produced a significant copper coinage in addition to its more widely-dispersed and prominent gold issue.<sup>350</sup> Most unusually in the Late Antique world, it also minted silver coins with a regularity, which suggests an integrated tri-metallic system. By contrast, for example, the Persian Empire produced a silver coinage supplemented by a copper currency for lower-level transactions, and only minted occasional, ceremonial pieces in gold.<sup>351</sup> The Kushans too, issued an irregular silver coinage.<sup>352</sup> The precise denominational relationship of Aksumite coins to one another is not clearly understood but the fact that almost all the kings for which more than a handful of specimens survive (and even for some of these) are known to have produced coins in all three metals strongly suggests an integrated currency system.<sup>353</sup>

---

<sup>349</sup> Munro-Hay (1984b) 16.

<sup>350</sup> The volume of ancient coin production is almost impossible to estimate from surviving examples, but the relative quantities of Aksumite precious and base metal coinage can be guessed from an examination of excavation results. In the case of Aksumite coinage, the excavations published by Phillipson (2000) yielded no gold coin finds (see later for a discussion of the general absence of Aksumite gold coins from African sites), eleven silver coins and 36 copper coins.

<sup>351</sup> Schindel (2006) on gold coins issued by the Sasanian state.

<sup>352</sup> Marshall (1951) 211.

<sup>353</sup> Hahn (1983), Munro-Hay (1999) – catalogue.



**Fig. 4.6:** *A copper coin of Ousanas (c. 350-400) with gilding visible on the reverse.*<sup>354</sup>

The other feature of Aksumite coinage which has received far more attention, but which is incredibly difficult to interpret from an economic perspective is the gilding of select silver and copper pieces. This practice, unique in the history of coinage, was used to emphasise specific features of coins. It was used consistently throughout the period of Aksumite minting and seems to have been an integral feature of some designs (rather than an eccentric addition to one-off exemplars). The process has been explored in some detail from the perspective of technique, which changed over time but at all times entailed a high level of complexity, expertise and expense.<sup>355</sup> The purpose of this gilding seems (based on the features it decorates) to have been largely symbolic. Nevertheless, it also strongly suggests that Aksumite coinage had at least a partially fiduciary character, since gilding would have affected the purely bullion value of the coins involved.<sup>356</sup> The fairly irregular weights of the bronze coinage point to a similar conclusion.<sup>357</sup>

---

<sup>354</sup> Image from [http://www.wildwinds.com/coins/greece/axum/ousanas/BMC\\_245.jpg](http://www.wildwinds.com/coins/greece/axum/ousanas/BMC_245.jpg) (accessed 20/6/2013).

<sup>355</sup> Hahn (2002).

<sup>356</sup> Munro-Hay (1984b) regards the copper coinage as token or fiduciary but does speculate (5) that gilding may have had some impact on its value.

<sup>357</sup> See Munro-Hay (1984b, 1999) and Hahn (1983) for copper coin weights.

While Aksumite coinage has been extensively studied, its use as a monetary instrument remains elusive. The conclusions usually reached in this respect, rather like those concerning the economy of the Aksumite state, turn primarily to the Indian Ocean trade in which Aksum occupied such a strategically important location. The gold coinage, in particular, has been subjected to far greater analysis than the copper or silver precisely for the reason that it is interpreted as having been developed by the state as an instrument of trade with the intention of interacting with Roman coinage.<sup>358</sup> It is commonly repeated that Aksumite gold coinage followed the weight standards of Roman currency, imitated Roman designs with local modification and was intended to facilitate trans-regional trade.<sup>359</sup> Such assertions should be questioned rigorously on two grounds. The coinage itself does not convincingly display the hallmarks of a currency created to interact with another. The wider context of Late Antique economic systems also suggests that theories of interlocking currencies should entail a heavy burden of proof in a world in which such a phenomenon would have been remarkable to say the least.

Arguments derived from the coinage itself rely principally on the weight, fineness and design of Aksumite coins. It is suggested that they were minted at a weight intended to be easily exchanged with Roman currency, with some adjustment for fineness, and that their design was intended to facilitate interaction with Roman coinage.<sup>360</sup> Based purely on analysis of the coinage, this is open to serious practical criticism. If Aksumite coinage was

---

<sup>358</sup> Metlich (2006) most strongly argues for the close connection between Aksumite coinage and Indian Ocean trade but the connection is asserted or implied elsewhere, for example Munro-Hay and Juel-Jensen (1995) 34-5, Phillipson (2009) 362-3.

<sup>359</sup> Phillipson (2009) 362-5 summarises the recognized theory that Aksumite coins weights were based on Roman models and expands upon the argument that coin design also mirrored changes in Roman coinage, suggesting that various parallels in the form of royal busts and crosses on coinage may be used to tie the Aksumite coin series (and thereby the regnal lists) more closely to Roman chronology.

<sup>360</sup> Munro-Hay (1999) 12.



set against Roman weight standards it would have required some awkward calculations, since it is supposed to have been regulated to half then one third of the weight of the contemporaneous Roman gold unit of account (first the *aureus* then later the *solidus*).<sup>361</sup>

Critiquing the theory that coin weights prove the inter-relatable nature of Aksumite and Roman coinage, this study will demonstrate not only that the weight relationships cited are far from conclusive, but also, using the comparison of the contemporary Kushan state, that even if Aksumite coinage was metrologically linked to Roman coinage this does not prove that their relationship was intended to be primarily driven by trade. Both the Aksumite and Kushan empires are perceived as orbital in many ways (especially culturally and economically) to the Roman world, being shorter-lived though far from ephemeral. Both issued coinage that clearly referenced Roman models. Kushan gold coinage has been argued to be based on Roman weight standards.<sup>362</sup> Both states were engaged in trade and accessed the sea from their inland power bases via ports which appear to have pre-dated Aksumite and Kushan state structures (in the latter case, the northwest Indian port of Barygaza which the Kushans do not seem to have controlled but through which their goods were shipped).<sup>363</sup> Both must be reconstructed from a distinctly thin literary record.

---

<sup>361</sup> Metlich (2006) 100-101, Munro-Hay (1999) 12.

<sup>362</sup> Alram (2011) 44-5, Van Lohuizen-de Leeuw (1949) 365.

<sup>363</sup> Liu (2001) 156.



**Fig. 4.7:** Gold coin of the late Kushan king Shaka I (c. 325-45), struck at the 7.9 g. weight standard modelled on the Roman 8 g. aureus.<sup>364</sup>

Despite these similarities, however, the Kushan Empire is, in comparison with Aksum, much less drastically reduced in historical literature simply to a commercial shunt valve in the Indian Ocean trade. This may be a product of the fact that what narrative history remains makes it clear that the Kushan Empire was already a great power before it struck out to seize a coastal enclave.<sup>365</sup> It may also be that Kushan coinage (despite an oft-cited but undoubtedly exceptional find of the Kushan ruler, Kanishka, in Wales) clearly did not circulate widely beyond the borders of the state.<sup>366</sup> For this reason, the Kushan involvement with Indian Ocean trade has tended to be perceived more clearly as a pre-

<sup>364</sup> British Museum, image in public domain <http://en.wikipedia.org/wiki/File:KushanCoinage.jpg> (accessed 17/6/2013).

<sup>365</sup> Mani (1987) on the archaeology and material culture of the Kushan state. On Kushan political history, Mukherjee (2004), Smith (1903).

<sup>366</sup> Kennedy (1912) 672 refers to stray finds of coins of Kanishka in Wales and Scandinavia and the Dabro Dammo hoard of 105 Kushan gold coins found in Aksumite territory has been used (Sergew (1972) 85) to argue for the thriving trade connections between Ethiopia and the Kushan state, but the fact that the coins were found in a single hoard, many converted for use in jewellery, and remain the only such find of Kushan currency, makes their economic role and meaning very difficult to assess, and like the stray finds further afield may be attributable to the general mobility of precious metal. On the hoard see Mordini (1960, 1967).

existing martial state utilising trade to enrich itself and feed its internal power structures, rather than as a state growing into power and prestige because of trade.

In particular, examination of the way in which Kushan reliance on Roman weight standards has been interpreted demonstrates how simple models of economic interaction have never been applied in the way that they have in Aksum. It was originally assumed that Kushan gold coins were based on the weight of the Roman *aureus* and, subsequently, owing to this coincidence of weight and the general absence of Roman coin finds from Kushan territories, that Kushan gold *dinars* were made (at least partially) from re-struck *aurei*.<sup>367</sup> Thus, the convergence of weights was perceived to be principally an expedient decision by the Kushan state. Metallurgic analysis has since demonstrated that Kushan gold coins were substantially struck from other (though unidentified) gold sources.<sup>368</sup> Despite the collapse of this argument, the similarity of Kushan and Roman gold coin weights continues to be regarded as intentional (as it may have been) but importantly Kushan coinage is rarely considered to be a currency designed to interlock with the Roman monetary system, even if it borrowed elements of metrology and design from it.<sup>369</sup>

---

<sup>367</sup> Van Lohuizen-de Leeuw (1949) 365, Wheeler (1954b) 142.

<sup>368</sup> Alram (2011) 44-5.

<sup>369</sup> Bhandarkar (1990 – reprinted from lectures given in 1921) 203 upholds the theory that Kushan coins adhered to the Roman weight standard in order easily to be exchanged in trade with Roman *aurei*. Alram (2011) 45 maintains the argument that the Kushan *dinar* was struck at 8 g. in accordance with the weight of the Roman *aureus*. MacDowall (2006) 49 argues in contrast that the only Roman *aureus* ever struck to a genuine 8 g. standard was that of Augustus, which is too early for the introduction of Kushan gold coinage (according to his dating of the Kushan era) and that the weight of later *aurei* (7.7 g.) represented too great a discrepancy from the *dinar* to argue for anything other than a similarity in weights. Though the differences seem small it is worth remembering (equally for the discussion in this chapter of the theory of Aksumite coins weights and the Roman currency system) MacDowall's point that a difference of 0.3 g. of gold represented in the first century approximately one *denarius* or a day's wage for a Roman legionary (49). Though the equivalent calculation of value is not easy to make for the fourth century onwards or for the Aksumite state in general owing to the more limited sources available, the argument that 0.3 g. of gold was a sum of significance remains relevant.

It does not, therefore, follow, that use of the weight standard of a neighbouring power in the creation of a new coinage should be engendered by a desire that those currencies interact: Kushan coinage used the weight standard of Roman coins but does not appear to have interacted with it. Nor is the relationship of Aksumite coinage to an ‘ideal’ Roman standard (in fact usually regarded as two standards, the ‘*aureus* standard’ up to the early fourth century and the ‘*solidus* standard’ thereafter) nearly as clear as that of the Kushan coinage to the 8 g. Roman *aureus*. The theory that Aksumite coins were designed to fit a Roman weight standard has long been asserted in numismatic literature and has continued to be predicated upon the assumptions that the weight of Aksumite coinage was intentionally pegged to that of the Roman gold coinage and that this was to facilitate trade. It is here proposed that, in the absence of compelling evidence for these two propositions, it must be borne in mind that similarity in weights between two coinages is not necessarily evidence for imitation and that imitation does not necessarily indicate trade relations.

Traditionally it has been argued that when Aksumite coinage was first introduced by Endubis (r. c. A.D. 270-300) the gold denomination was matched to the weight of the Roman half-*aureus*.<sup>370</sup> The reign of Ezana (r. mid fourth century), who converted to Christianity, also coincided with the coinage reform of Constantine I in the Roman Empire which replaced the *aureus* with the lighter *solidus*.<sup>371</sup> At this time the gold coinage of Aksum is regarded as shifting from the ‘*aureus* standard’ (i.e. half the weight of the *aureus*) to the ‘*solidus* standard’ (regarded to be the weight not of the half *solidus* or *semissis*, but of the 9-*siliqua* piece). Shortly thereafter, a lighter one-third denomination (the *tremissis*) was introduced, but rather than continuing to reflect Roman weight

---

<sup>370</sup> Munro-Hay (1999) 15-16.

<sup>371</sup> Depeyrot (2012) 235-9.

standards, the Aksumite Empire chose to retain the weight standard established under Ezana, possibly to compensate for the increasingly debased gold now in use in the empire's coinage. The standard established by Ezana was, therefore, maintained until the disappearance of Aksumite coinage in the early seventh century, though debasement continued to lows under Kaleb in the sixth century of only 64 % gold and possibly sank lower.<sup>372</sup>

On its face some clear problems may be raised with this hypothesis and the evidence cited for it. First, the theory hinges on only one actual change in Aksumite coin weights, that under Ezana. Others would have been expected had Aksumite coinage really been seeking to follow changes in Roman coinage, but they did not take place, while other variations in the coinage seem hard either to systematise or to link to Roman coin weights, though effort is made to do so. Munro-Hay's attempt to explain the date of Ezana in relation to confluence of coin weights is worth quoting at length as it is demonstrative of the sometimes torturous contortions required to sustain the theory that Aksumite coins were pegged closely to their contemporary Roman weight standard:

Until 324 Constantine's new solidus of 4.54g in the western empire ran parallel to the old heavier aureus of 5.45g still in use in the eastern empire. The theoretical weight of the half-aureus was then 2.72g; that of the new half-solidus about 2.27g. With the defeat of Licinius in 324, the new solidus became universal, spreading to the eastern mints of the empire, the regions with which Aksum had its closest contacts. The first two types of Ezana's gold issue contrasted with another Christian issue of Ezana with the name written without the s-ending and with the weight more or less in conformity with the so-called tremissis of the post-324 Roman reform, at about 1.70g. The Aksumite pieces of this type weigh about 1.53g; subsequent Aksumite gold issues all more or less adhere to this weight.

---

<sup>372</sup> Munro-Hay (1999) 12, Oddy and Munro-Hay (1980, 1988) on results of specific gravity testing of Aksumite coinage.

The earliest Ethiopian gold coins, those of Endubis, seem clearly enough to be associated with the older Roman aureus, the average weight being around the 2.60-2.70g mark, close to the 2.72g weight of the Roman half-solidus [sic]. Aphilas, Endubis' successor, used similar weights. But after this the weights drop considerably, the single known gold coin of Wazeba weighing 2.05g, while Ousanas (presumed to be also Ella Amida, Ezana's father) issued gold coins with weights which, in the surviving pieces, vary from 2.56g down to 1.85g.

The problem is, what does this fall of the gold-weight at Aksum signify? The heavier coins of Ousanas could represent half-aurei, the lighter ones post-324 reform half-solidi. This indicates that the change from aureus standard to solidus came in Ousanas' reign, which would thus date from sometime after about 320 to at least 324/5.<sup>373</sup>

The fact that this single change occurred under a monarch associated with other far-reaching changes in Aksum, including the state religion and associated symbolism, further complicates the supposition that this change was purely motivated by alterations in Roman coinage. Ezana was clearly a more general reformer. Second, the shift from using the Roman half-denomination of gold to the one-third denomination seems counter intuitive since it would increase rather than reduce the complexity of transactions between the currencies. It should also be noted that almost no examples of either 9 *siliqua* or *tremissis* pieces have been found in east Africa, Arabia or India. They do not appear to have been a circulating part of the Indian Ocean trade networks, and therefore would not have served as models. If Aksumite coinage was struck to these weight-standards it must have been based on calculations from the *aurei* or *solidi* known to have travelled east.

Third, the purity of Aksumite coinage did not long equal that of late Roman gold coins. It is therefore argued that a higher weight was maintained to compensate for increasing debasement of the coinage. This is questionable for various reasons. The fact that the coinage quite quickly came to weigh more than its supposed relationship with the

---

<sup>373</sup> Munro-Hay (1999) 15-16.

Roman standard would presumably have complicated exchange calculations even further. It also would have openly advertised to those involved in economic transactions that the Aksumite coinage was debased. As noted above, the over-weighting of Aksumite coins against Roman models to compensate for debasement also failed to keep abreast of increasing debasement: there was no corresponding increase in weight to suggest such intentional balancing of weight against fineness.

The design of Aksumite coins has been crucial to arguments about their reliance on Roman models, especially in Indian Ocean studies.<sup>374</sup> It is clear that the inspiration for Aksumite coin designs derived in part from late Roman models (though it is arguable that Sasanian and Kushan coin designs also influenced Aksumite moneyers).<sup>375</sup> Nevertheless, from its inception, Aksumite coinage demonstrated a self-confidence and assertion of local style which represents a clear distinction from, for example, early royal coinages in the medieval west, which made far greater use of Roman models.<sup>376</sup> Aksumite coinage until the conversion of Ezana openly used pagan symbolism which had no parallels in Roman coinage but reflected the religious art of Aksumite material culture.<sup>377</sup> The use of a profile bust (derived from Roman models) also cannot be pushed too far as an argument for derivation. The appearance of Aksumite coins, especially the use of the royal bust on both obverse and reverse was unique in the period of minting. In any case it should not be assumed that Aksumite coins ever looked sufficiently like Roman models that they could have circulated alongside Roman coins by virtue of looking similar. The possible

---

<sup>374</sup> Phillipson (2009) 362-66.

<sup>375</sup> Munro-Hay (1991) 151.

<sup>376</sup> A survey of *Medieval European Coinage* Vol. 1 (Grierson and Blackburn 1986) and introductory notes to each coin series clearly demonstrates the debt owed metrologically and stylistically to Roman models by the coinages of, among others, Merovingian Francia, Visigothic Spain, Ostrogothic Italy, Vandal north Africa.

<sup>377</sup> The earliest coins of Endubis, for example, feature prominently stalks of barley and a crescent and disc thought to represent the sun and moon gods (Munro-Hay (1984b) 45).



diplomatic affront to Rome that this represented has already been mentioned and further undermines the notion that using Roman design motifs on Aksumite coinage was an attempt at conciliation and participation in a mingled economic sphere.



**Fig. 4.8:** Pre-Christian gold coin and copper coins (obverse) of Endubis c. A.D. 227-35 showing the king in a cloth headdress, surrounded by barley stalks and with a crescent and circle design over the royal bust (circled).<sup>378</sup>

The use of Greek on the gold coinage (while Ge'ez became more common on the silver and copper issues) suggests some degree of trans-regional perception of the impact of these coins, but this should not necessarily assume economic impact.<sup>379</sup> It should be remembered that Aksumite epigraphy was also sometimes produced in Greek. Greek operated as a *lingua franca* for the Red Sea region and most probably, owing to the pre-eminence of the Roman Empire as the major political entity in that sphere, had

<sup>378</sup> Image from I, [PHGCOM](#) (accessed 17/6/2013).

<sup>379</sup> Phillipson (2009) 365 systematically demonstrates that up to the early sixth century Greek was used for almost all coin legends. Thereafter Ge'ez was used on the silver and copper issues, with Greek retained on the gold coinage. Phillipson argues on the basis of Aksumite coin finds in south Arabia and India that Greek was retained on the gold coinage because this was intended mainly for use in international trade, but does not explain why the sixth century witnessed a shift to Ge'ez on the lower denomination coins.



associations of prestige. There are reasons beyond the requirements of economic exchange, therefore, which might explain the use of Greek on Aksumite coins. In any case, it is unclear how far coin legends played any part in the economic acceptability of coins within the Indian Ocean trading network. As the analysis of imitation late Roman coins in India in the next chapter suggests, of all of the features of coinage which provided enhanced economic value over bullion, the legend seems to have been invested with the least significance.

Thus, examined purely on the basis of its internal features and a comparison with contemporaneous Roman coinage and monetary history, nothing about Aksumite gold coinage necessarily supports the contention that it was produced to facilitate Indian Ocean trade with the Roman Empire. Indeed, some features seem directly to contradict this hypothesis. Expanding analysis to examine the relationship of the gold coinage to the silver and copper denominations and considering the circulating pattern of the gold coins further supports caution. The first striking problem with the theory of Aksumite coinage as an 'exchange valve' within the Red Sea is the total absence of gold Aksumite coin finds in the Mediterranean or along the Roman Red Sea coast.<sup>380</sup> While Roman monetary control was certainly sophisticated and aimed to prevent foreign currency circulating within its sphere, this total absence, combined with the lack of any reference in Roman sources, suggests that Aksumite currency did not in fact reach the Roman Egyptian/Mediterranean monetary system at all. This is further supported by the very small numbers of Roman coin finds within Aksumite territory already mentioned with respect to the port of Adulis.

---

<sup>380</sup> Hahn (1988).

With the exception of the al-Madhariba hoard, which must be considered remarkable for a number of reasons and which was discovered in Yemen, not the Aksumite heartland, it is very rare for Roman coins to be found on Aksumite sites in Africa, either at an earlier date than the introduction of Aksumite coinage, or alongside it from the fourth century onwards.<sup>381</sup> The most logical explanation for this absence is that the Aksumite state had some awareness of Roman coinage, but did not begin to mint its own either to replace or supplement Roman currency circulating in its region of control, or to interact with a Roman medium of exchange already widely accepted in the area. The only fairly well documented mixed hoard was apparently discovered in India, near Mangalore, and contained gold Aksumite and late Roman coins, discussed in greater detail in chapter five.

In comparison to the gold coinage, the silver and copper issues of the Aksumite state are given limited consideration in studies of Indian Ocean trade networks. If the gold coinage and its circulation are considered in light of these lower value denominations, however, then its role as an integrated currency within an Indian Ocean-wide network seems even less plausible. First, there is a clear discrepancy between the circulation of gold coinage and silver and base metal pieces. Second, the spread and volume of the silver and particularly the copper coinage suggests that the Aksumite state was heavily monetised: copper coinage appears to have circulated even in comparatively small rural settlements.<sup>382</sup> This pattern of circulation, if compared to interpretations of coin loss from elsewhere, such as the contemporaneous late Roman Empire, strongly indicate that even

---

<sup>381</sup> Munro-Hay (1989b).

<sup>382</sup> Phillipson (1998) 63.

low-level transactions were conducted routinely using coinage.<sup>383</sup> This is not to suggest that barter played no part in local or trans-regional economies. Any dichotomous vision of monetised and barter economies is likely to be wide of the mark in describing economic systems ancient or modern. There are only degrees to which, and at which levels, money had, and was perceived to play, an economic role in a society.

The introduction of a trimetallic system which appears quickly to have become a major organ of exchange within the Aksumite state, but which appears not to have circulated much beyond its own borders strongly suggests that coinage was introduced to serve the needs of Aksum's own internal economy, rather than that of an external trade network. One of the most mysterious features of Aksumite coin finds is the almost complete absence of gold from Aksum's African territories. Almost all excavated or otherwise fairly securely provenanced gold coins between the reigns of Ezana and Kaleb come instead from southern Arabia (supplemented from time to time by finds from India). This has raised serious questions among analysts of Aksumite coinage, leading Munro-Hay in the first catalogue of the British Museum's collection to suggest that he would reserve judgement on this point until more finds could be recovered from Ethiopia.<sup>384</sup> Time has not, however, invalidated his cautious statement that gold coins were far more common in Aksum's southern Arabian territories. While this unusual aspect of coin circulation continues to defy explanation, it does not fundamentally support the idea that Aksumite coinage was created or maintained for the service of Indian Ocean trade.

---

<sup>383</sup> Morrisson (2001) 217-18.

<sup>384</sup> Munro-Hay (1984b) 6.

The unusual distribution of coins may have had some relationship to trade insofar as the Aksumite state seems to have been a complex agrarian polity, which made use of the opportunities arising from its location on the Red Sea trade route. In this context, the goods most desired by this trade route derived in part from its southern Arabian territories, an incense-rich area that may simply have represented the richest region, and thus the area most likely to make use of gold for regular transactions.<sup>385</sup> If, as elsewhere in the Late Antique world, precious metal coinage was also used to pay the Aksumite military, then the Aksumite military control of southern Arabia already noted may further explain the disproportionate incidence of gold in this region of the empire.

Overall, the fact that the Aksumite state was involved in trade with India and profited from it cannot easily be denied (see chapters five and six) but recent studies are increasingly demonstrating that this was not a state which depended upon lying in the middle of a trade route connecting India and the Roman Empire. Of far greater significance were its access to the spices of south Arabia and the ivory of the east African coast. Access to local gold sources and the internal agricultural resources of the empire were perhaps its most valuable assets and after the opportunities to profit from Red Sea trade diminished in the sixth and seventh centuries, these resources seem to have sustained an inland Ethiopian state into the modern period. The over-weighting of the Askumite position in Indo-Roman trade is largely based on a forward extrapolation of the references to the port of Adulis from the *Periplus* (and the problematic decontextualizing of the *Periplus* which in turn makes this possible), but even this does not provide the clear continuity of literary and physical evidence often alluded to in the secondary literature.

---

<sup>385</sup> Groom (1981) and Peacock and Williams (2006) on the centrality of Arabia to the ancient incense trade.

The oft-quoted statements linking pre-Aksumite Adulis to Aksumite economic policy and Indian Ocean trade are the reference to cut pieces of brass being used at Adulis along with some Roman coins, leading to the introduction of Aksumite coins, but Adulis has yielded hardly any Roman coins or other tokens which may have been used in their stead.<sup>386</sup> Adulis clearly was a trading port of some importance and the coin finds from the site suggest a thriving market site but the coins are Aksumite and mainly silver and copper, conforming to the general lack of Aksumite gold coins in Africa, suggesting that the settlement was part of the same internal monetised economy attested elsewhere. It is, therefore, not possible to conclude from the numismatic data that Indo-Roman trade was the reason for the rise of the Aksumite state or the reason it began to issue coinage. Indeed, it is not certain that any state in Late Antiquity or the ancient world began to issue coinage as an instrument of trade. Rather, coinage appears to have been a development of the state, which, whatever its effects on economic circles, did not emerge from trade. Rather, its point of value and origin lay in facilitating the disbursement of state payments, the receipt of taxes and possibly the administration of legal punishments in the form of fines.<sup>387</sup>

#### **4.4 Conclusion**

The foregoing re-examination of the written and numismatic evidence for Aksumite trade, combined with the recent revelations of archaeological excavations, reveals several important themes for understanding Indo-Byzantine (and Indo-Roman) exchange. The Aksumite civilization is now viewed increasingly by archaeologists from the inside out, rather than from the perspective of cultural and economic dependency on

---

<sup>386</sup> Munro-Hay (1984b) 32-3.

<sup>387</sup> Peacock (2006) 642-49.

Rome. Demonstrating that the coinage of Aksum cannot conclusively (or even probably) be shown to have had an inter-relational connection with Roman coinage is significant for several reasons. First, it indicates the continued dominance of Romano-centric models in understanding western Indian Ocean trade networks, and indeed, non-European cultures which bordered the Roman Empire. It also suggests the ease with which the various apparently secure narratives of Indo-Roman trade, carefully woven from threads such as that of Aksumite middlemen minting coins to support long-distance maritime trade, may fray rapidly if the evidence base for underlying conclusions is revisited in light of new discoveries or critical approaches. Finally, it suggests the possibility of deconstructing this grand narrative structure. A unitary account of Roman trade with India is lost in the process (or at least becomes much less secure), but the highly contingent and complex regional interactions, and related but largely independent cultural streams which lined the Indian Ocean, are made available for new analysis placing non-European actors and internal motivations centre-stage.

## CHAPTER FIVE: BYZANTINE COINS IN INDIA

### 5.1 Introduction

The examination of three pieces of evidence often used in the reconstruction of Indo-Roman trade or used to suggest the structure of comparatively ignored Indo-Byzantine exchange (the *Periplous of the Erythreian Sea*, the eleventh book of *The Christian Topography* and the precious-metal coinage of the Aksumite Empire) suggest revisions to traditional narratives. Above all, they highlight the fragility of interpretations built on positivist and ‘straightforward’ readings of evidence which is highly complex and lacunose. Ceramic evidence, examined particularly in chapters six and seven, provides perhaps the largest and most important new category of evidence and shows signs of dramatically reshaping perspectives on long-distance trade.<sup>388</sup> However in the sphere of Indo-Byzantine exchange the coinage also remains largely unexplored. Not only does it constitute a hitherto under-used dataset, but also offers a chance to address some central and ongoing questions pertaining to numismatic research into first- to third-century Indo-Roman trade. Methodologically it is crucial to distinguish in the case of late Roman coins in India between interpretation based on coins as objects and as series, and the collection histories of the objects must be taken into full account when approaching these artefacts. With careful consideration of these factors, however, it is possible to review the published and unpublished numismatic evidence, and to draw conclusions about both the economic history of Late Antique trade between south India and the Mediterranean and elements of the social history of south India.

---

<sup>388</sup> See especially chapter six.

## 5.2 Methodological considerations

Late Roman coins found in south India form the heart of this chapter, but they are a complex body of evidence, which has never previously received significant scholarly attention. Even when examples have been published they have appeared as peripheral details in catalogues of Roman coins, or decontextualized notices of discovery. Before approaching the coins, either collectively or individually, therefore, it is necessary to consider the methodological implications of working with them as evidence for economic and social history, and the impact which modern factors of discovery and publication have had on the availability of this evidence.

### *5.2a Coins as objects or series and the possibilities of quantification*

The first question to address is that of how coins are approached as a body of material. Numismatic research most often focuses on coins as series, objects of specific chronological and political moment, which because of their mass-production can function as tags within archaeological or cultural contexts. This is clearly illustrated in the use of coins as dating devices in stratigraphic excavations<sup>389</sup> and the listing of coins in notifications of discoveries, which most often provide their standard characteristics (design, legend, mint-location etc.) and a reference to a catalogue containing a published example of the appropriate type, and frequently ignore features unique to the specific coin.<sup>390</sup> In publications of Roman coins from India, for example, it is not unknown for piercings, acknowledged to be a common feature of coins in the subcontinent, not to be

---

<sup>389</sup> Sarma (2000) 146.

<sup>390</sup> Berghaus (1992c), Gupta (1984), Turner (1989).



mentioned or merely to be summarized for a collection. Other modifications such as scratch marks usually go completely unreferenced.<sup>391</sup>

In many contexts such an approach rightly exploits the invaluable data contained within coins for understanding economic structures and market systems.<sup>392</sup> Coin finds in stratigraphic layers likewise provide an unquestionable *terminus post quem* for archaeological contexts if there has been no disturbance. The utility of such approaches to Roman and especially Byzantine coins in India, however, is open to question. Publication of these coins has most often focused on such serialized analysis, examining chronological distribution to draw conclusions about temporal changes in trade with India.<sup>393</sup> The difficulty of treating Roman and Byzantine coins in India as series is twofold: the small total numbers under discussion and the questionable degree to which assumptions about their use in local economies are supportable both undermine typological and serializing approaches. The Byzantine gold coins found in India amount to perhaps two hundred.<sup>394</sup> Many examples are unique and few appear in India with examples of the same type even if others of the same issuing emperor are attested. Furthermore, as discussed below, many examples are imitations apparently produced in the subcontinent, which therefore cannot be seen as belonging to the same series as late Roman state issues. There are also many unanswered questions about the use and movement of late Roman and Byzantine coins

---

<sup>391</sup> The publication of the Akki Alur hoard is the best example of coins with piercings and scratch marks being described in numismatic literature without either mentioning scratches or making clear which coins have piercings. See Gupta (1984) and Nagaraja Rao (1980, 1987). The publication of Roman coins by Subrahmanyam, Rama Krishna Rao and Brahma Chary (2008) 12 also features a coin on which intentional scratch marks are clearly visible but are not mentioned in the coin description (Acc. No. 15133).

<sup>392</sup> Analysis of coin finds of the late Roman Empire from urban locations within the empire has demonstrated, for example, stark and geographically widespread chronological changes in coin use which appear reflective of the changing economic fortunes of the empire in the seventh century: Morrisson (2001) provides a quantitative analysis of coin finds and an examination of the evidence for their circulation.

<sup>393</sup> Turner (1989) 2-4.

<sup>394</sup> 189 in this catalogue and additional published material and a suitable margin for coins in private collections which though not accessible are generally known to exist.

within India. In particular, distributional and chronological analysis subsequently used to draw conclusions about western trade with India is hampered by increasing evidence that precious-metal coins had major symbolic value within local economies which may have stretched over several centuries and radically affected their movement within India. Copper coins are more numerous with perhaps 8,000 examples but the circumstances of their discovery and possible historic use are even more challenging to interpret: their discovery and links to coin finds in Sri Lanka are discussed later in this chapter. In the case of both copper and precious-metal coins quantitative analysis can suggest certain patterns, which alongside other evidence may reveal contours of social and economic history, but which should be treated as indicators only. An appreciation of the effect which modern collecting and publishing habits have had on the available evidence is a prerequisite to identifying any potentially historical patterns in quantitative approaches to the numismatic material.

### ***5.2b The impact of collecting strategies on numismatic evidence for Indo-Byzantine trade***

Most archaeological studies are concerned in some capacity with the taphonomy of the objects under discussion. Such analysis is, however, often presented perfunctorily in introductory remarks. Alternatively a sharp distinction is drawn between a detailed examination of the historical (ancient) treatment of the object, such as its deposition or modification, and a more cursory summary of its modern location.<sup>395</sup> As this chapter explores, however, in the case of coin finds in India, a deep and chronologically holistic

---

<sup>395</sup> Nagaswamy (1995) 7, for example, remarks near the end of the introduction to *Roman Karur* that '[t]his book is essentially the history of Karur, with special reference to its early history when it was under the Cheras'. This comes after four pages which barely discuss the modern city of Karur or the circumstances of the discovery of the antiquities examined in the book. In the bulk of the text individual collectors are occasionally mentioned, but no analysis is provided of local patterns or habits of collecting.

review of the discovery, preservation and public accessibility of these coins is a necessity for further study of their historical context. This includes assessing the role and importance of archaeological services, public museums and private collectors in the preservation and public availability of antiquities.

### 5.2b (i) *Metal*

An illustrative example of the importance of appreciating contexts of collection and publication concerns the distinct treatment of late Roman gold and copper coins in India. The overwhelming majority of finds in museum collections and, with one notable exception, in publications, are gold. This meets expectations raised by the documentary sources concerning Roman and Late Roman trade with India, some of which have been explored in chapters three and four. It seems doubtful moreover that western merchants purchased expensive Indian goods, on which a profit was clearly to be made, in copper coinage. This assumes, of course, that goods were purchased with coin, rather than exchanged for other products. Tomber has concluded from analysis of Roman amphorae in India that wine, oil and *garum* may have gained status value in the east, even if they never gained great local popularity.<sup>396</sup> Nevertheless, the large quantities of coinage compared to other Roman and Late Antique remains in India suggest that precious metal was a trade good in its own right, and one of perhaps paramount significance.

Despite this seeming confluence of the documentary and numismatic sources for both India and Sri Lanka, however, the preponderance of gold coinage in discussions of

---

<sup>396</sup> Tomber (2009a) 48.

Indo-Roman trade must be viewed cautiously. Krishnamurthy in 1994 published only a portion of a private collection of copper coins, which he claims numbers over 6500.<sup>397</sup> These coins were discovered by the collector or his agents in the Karur river valley in Tamil Nadu, in circumstances discussed below, and are a valuable reminder that the significant majority of gold coins in museum collections and many private collections may reflect the agenda of modern collection more than historical reality.

The greater interest by museums, up to at least the mid-twentieth century, in gold and silver coins,<sup>398</sup> and the policy of museums even today to streamline collections by selling or sharing multiple copies of the same coin type, both ensure that museum collections alone are a poor indication of relative quantities of coin denominations and metals in actual circulation (and further highlight the theme of this chapter that coins are often viewed as types rather than objects).<sup>399</sup> The policy of streamlining is today more careful, and resists, for example, splitting up hoards, but this has not always been the case. Furthermore, single-finds of copper are less likely to be submitted to museums by members of the public since the coins have a significantly lower intrinsic value. The condition of coins (the copper examples in Krishnamurthy's collection are all extremely

---

<sup>397</sup> Krishnamurthy (1994) 12.

<sup>398</sup> The overwhelming interest in gold rather than copper coins is indicated by the fact that the British Museum collection of Indo-Greek coins contains more gold coins than copper though comparison with casual coin finds and other collections (including the Fitzwilliam Museum) demonstrates that this ratio is entirely non-representative: Garnder (1886), Mitchener (1975a-i), Bopearachchi (1991) and my catalogue of the Fitzwilliam Museum catalogue (Day (2009)).

<sup>399</sup> In fact, Indo-Greek coinage was one of the most sophisticated tri- and bi-metallic systems in the ancient world, with a substantial, multi-denominational copper coinage to facilitate low-level transactions. Though the Fitzwilliam Museum collection does not illustrate an artificial preponderance of gold, its records do demonstrate the exchange of coins between museums in the nineteenth century, often at the expense of hoard coherence. Between 1913 and 1945, for example, the Fitzwilliam Museum and the British Museum were part of a coin-sharing scheme with Indian museums, which saw the Fitzwilliam Museum receive two silver-plated Indo-Scythian coins from a hoard of over twenty discovered in Afghanistan. The location of the remainder of the hoard is not included in the museum's records, and unless all recipients of its contents have preserved their paperwork, reconstructing this hoard would now be impossible: Day (2009) 1.

corroded) may even mean that members of the public are unaware of the nature of their discovery.<sup>400</sup>

This does not mean that analysis of published and publicly available coins (usually gold or silver) in museum collections has no value to an assessment of commerce and contact in the ancient world. Especially in the case of Late Antique contact between south India and the Mediterranean, if considered in their own terms, the quantities of gold and silver, in conjunction with the literary evidence illustrate at least one component of long-distance trade.

#### *5.2b (ii) The history of modern India and antiquities legislation*

If gauging the significance of precious- and base-metal coinage requires an appreciation of the biases which may exclude some finds from public collections, assessing the construction of those collections is another vital component to understanding the modern distribution of artefacts. Analysis of Roman and Byzantine coins in south India cannot be separated from an understanding of the role of the Archaeological Survey of India (ASI) and public museums in India. Most of the unpublished coins discussed in this thesis are located in public museum collections. Legislatively the 1878 Treasure Trove Act, which underpins all subsequent national and federal laws dealing with antiquities in India, requires that precious metal coins should be deposited with local ASI authorities.<sup>401</sup>

---

<sup>400</sup> Krishnamurthy (1994). The plates give the best indication of the poor state of preservation afflicting the majority of coin finds.

<sup>401</sup> At a national level the most significant legislative steps for the preservation of antiquities, subsequent to 1878 have been The Ancient Monuments Preservation Act, 1904; The Ancient Monuments and Archaeological Sites and Remains Act, 1958; The Antiquities and Art Treasure Rules, 1972. In each of the federal states under discussion the relevant amendments or local Acts are: Karnataka: The Mysore Ancient

In practice, of course, various coins end up in private hands, and private collection, as discussed below, has a longstanding if not always harmonious relationship with public antiquities collection in India.

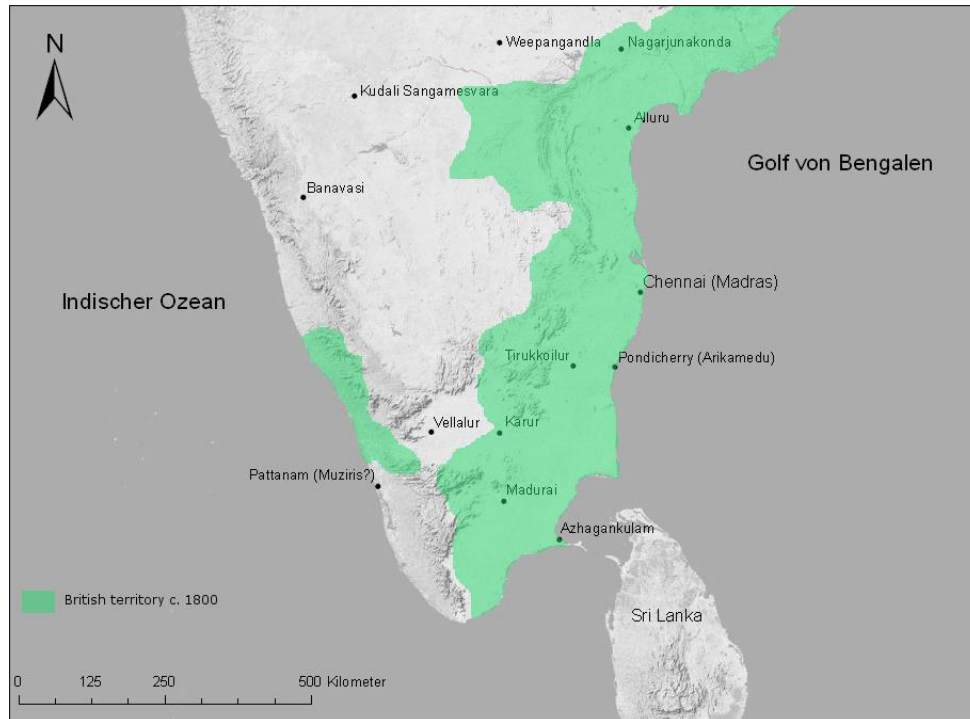
It is the individual histories of coins in museum collections, which are considered here, and underlying this is the federal organisation of modern India and its pre-Independence organisational structure. The governmental administration of India has been hugely instrumental in directing coins to the museum collections in which they currently reside. The discovery of Roman coins in India is first documented from the eighteenth century. Unfortunately, from the perspective of tracing antiquities, the period from 1750 to the present marks one of the most eventful in the changing jurisdictional history of the subcontinent.

In 1750 the Indian subcontinent was caught up in the process of European maritime expansion, with a long-established Portuguese presence around Goa and British and French coastal enclaves, particularly in the Bay of Bengal and further south along the east coast of the peninsula. These frequently changed hands, though the general trend was towards a British monopoly of European governance in India. This trend was also accompanied by the transformation of these broadly commercial interest groups into more permanent and prescriptive state structures. In addition to the European presence, a patchwork of other states and kingdoms divided the subcontinent. These included in

---

and Historical Monuments and Archaeological Remains and Sites Act, 1961 and The Karnataka Treasure Trove Act, 1962. Kerala: The Kerala Treasure Trove Act, 1968; The Kerala Ancient Monuments and Archaeological Sites and Remains Act, 1969. Tamil Nadu: The Indian Treasure Trove (Tamil Nadu Amendment) Act, 1949. Andhra Pradesh: Andhra Pradesh Ancient and Historical Monuments and Archaeological Sites and Remains Act, 1960 (and a 2001 amendment).

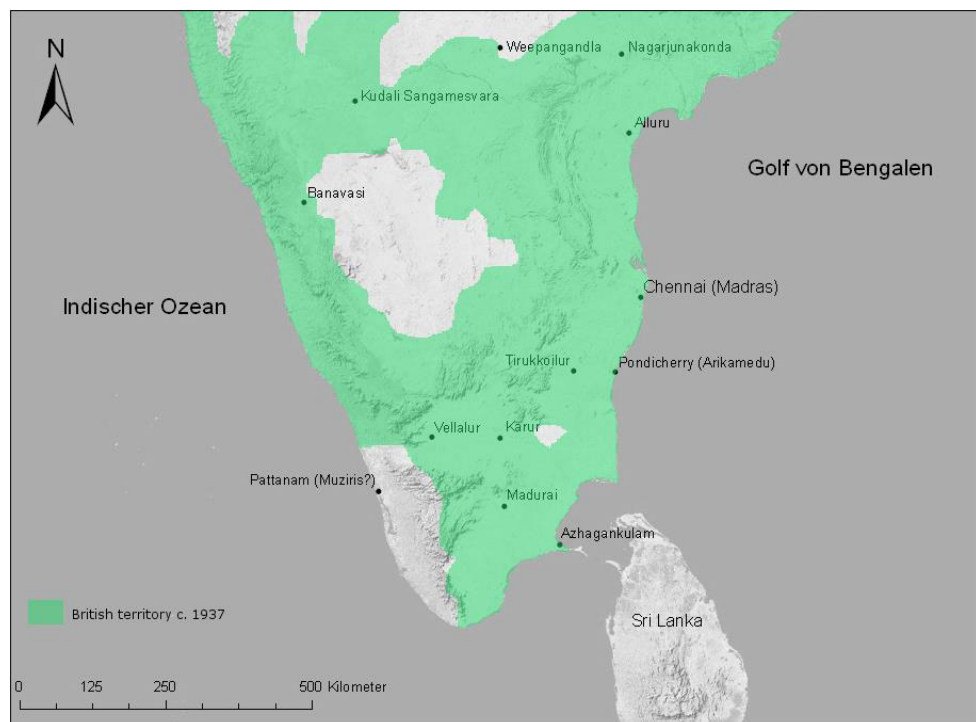
peninsula India the territory of the Nizam of Hyderabad, the Sultanate of Mysore and the Kingdom of Travancore.



**Fig 5.1:** *Map of south India c. 1800 with British territory marked. Other territory was divided between small coastal enclaves under Dutch, French and Portuguese control and the territories of Indian governments of varying levels of independence.*

From 1857-8, following the suppression of the Indian Mutiny/First Indian Independence War, British rule in India constituted the dominant administrative authority in the subcontinent, including the area covered by the modern states of India, Pakistan and Bangladesh, but there remained a significant number of princely states, given a high degree of theoretical autonomy by the British colonial government. In the matter of the disposal of antiquities, the princely states operated according to their own traditions or legislative practices. In the areas under British rule, the introduction of treasure trove legislation in Britain in 1875 led to its application to India in 1878 in the form of the 1878

Treasure Trove Act (Act IV of 1878). In independent India minor amendments to this Act have been introduced in most states but the main regulation of relevance to numismatic evidence, requiring the finder of any treasure with a material value in excess of ten rupees to notify local authorities, remains common to most states.<sup>402</sup>



**Fig. 5.2:** Map of India c. 1937 showing the consolidation of British authority over the majority of the subcontinent. The areas not under direct British authority now consisted of semi-autonomous Indian princely states.

In 1947, the partition of British India into the states of India and East and West Pakistan involved massive upheaval of populations and government structures. For the archaeological services of India, however, 1944-8 was also a period of rapid development and high productivity. The colonial government had, in 1944, brought in R. E. M.

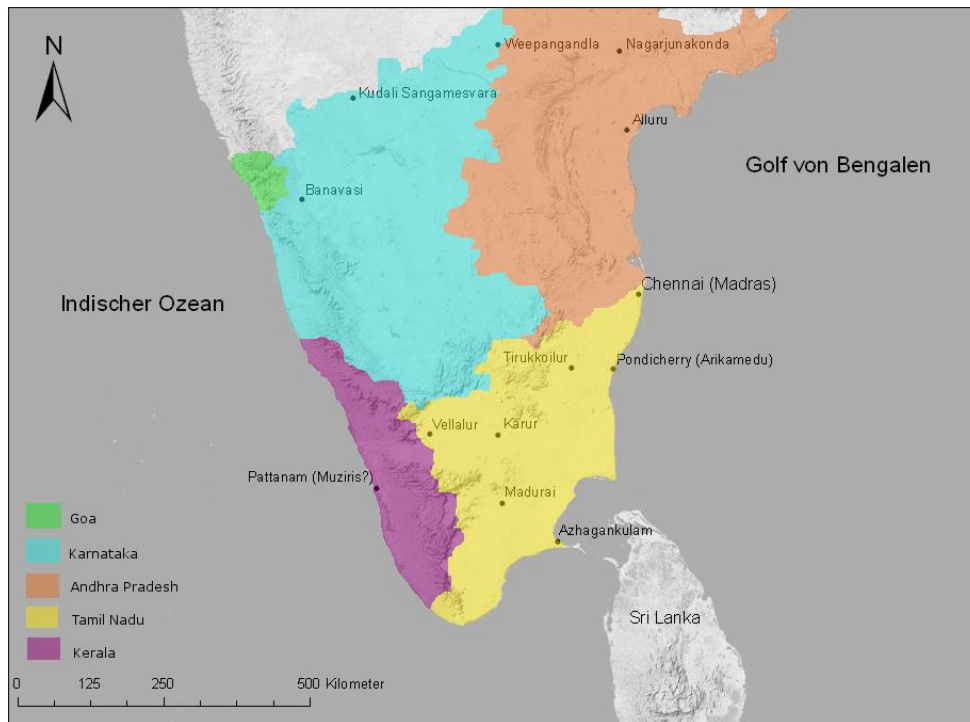
<sup>402</sup> ASI website (accessed 01/2010). The latest legislation to affect the preservation of coins is the 1972 Antiquities and Art Treasures Act, which maintains the right of the Indian government to keep movable treasures and art in India and theoretically regulates and monitors their movement.



Wheeler, whose involvement in the development of Indo-Roman archaeology will be discussed in the next chapter. As head of the Archaeological Survey of India, he brought in and trained new staff in the latest techniques of archaeological exploration and helped to create an outline of a service, which would be maintained (albeit in the form of two separate institutions) by the independent governments of India and Pakistan. The incorporation of the princely states into the new federalised Indian nation brought the whole polity under the auspices of the Archaeological Survey and the authority of central treasure trove legislation. Federal states have subsequently added their own amendments and the operation of the ASI is significantly regional, as will be discussed shortly. This very brief survey of the modern history of the subcontinent as a whole should, however, demonstrate the competing and sometimes contradictory forces of centralisation and regionalism, which have dominated colonial and post-colonial Indian history. The impact of these forces on the preservation of antiquities will be considered in greater depth, but must be recognised as a symptom of a far larger situation.<sup>403</sup>

---

<sup>403</sup> For an effective summary see Metcalf and Metcalf (2006).



**Fig. 5.3:** Map of modern peninsular India showing the four federal states examined in this thesis, plus Goa, in which no recorded finds of Byzantine or late Roman coins have been made.<sup>404</sup>

Returning to the level of this study, the implications of the sheer size, and disrupted political history of the subcontinent for the recording and preservation of antiquities are clear. As Wheeler noted in 1955:

The old Archaeological Survey of India, now the Archaeological Department of the Republican Government of India, was and probably still is the largest and most complex archaeological machine in the world. Prior to the partition of 1947 it administered directly or indirectly, the archaeology of one and a half million square miles of Asia, much of it difficult of access.<sup>405</sup>

<sup>404</sup> Map published by [http://commons.wikimedia.org/wiki/File:India\\_states\\_and\\_union\\_territories\\_map.svg](http://commons.wikimedia.org/wiki/File:India_states_and_union_territories_map.svg) (accessed 01/09/2013). The north of India has been removed partly due to relevance of this study and also to avoid the complicated question of mapping current political boundaries with China and Pakistan.

<sup>405</sup> Wheeler (1955) 156. At over nine million square kilometres, the archaeological challenge faced by China was and remains one of the few comparable to or greater than that of India, but was neither within the scope of Wheeler's experience, nor by 1955 had it developed a single, central service designed to coordinate all archaeological research over its vast territories, and plan and initiate new excavations (Chang (1963) 3-14).

When considering such geographical extent and administrative complexity, there are both advantages and disadvantages to be considered. Turner points out that ‘[n]o area of India has a complete series of Treasure Trove reports, and those that do exist rarely provide a usable description’.<sup>406</sup> System errors may occur at the level of the discovery of antiquities; for example, the Balapitiya hoard in India is one of many examples in which the coins disappeared before numismatists could examine them.<sup>407</sup> In other cases, however, understanding between the archaeological services and public is simply lacking. Though referring to Sri Lanka and non-Roman antiquities, the 1923-4 report of the Archaeological Survey of Ceylon illustrates this problem succinctly, noting that,

Our coin collection has received a valuable accession of gold coins from a treasure trove at Allaipilli, Jaffna. The manner in which this find came to our notice illustrates the sad lack of co-operation of the public with the Archaeological Department. The find only came to our notice through the papers in November, 1922; it was not till April, 1924, that we managed to secure 12 of the coins, and our request for a share was considered so strange as to require an explanation...Incidentally collectors have complained to me that they had never heard of this find, nor ever given an opportunity of purchasing specimens.<sup>408</sup>

More rarely, but arguably more worryingly, system error may also occur at the level of the archaeological service itself. The Weepangandla hoard, unearthed in 1964, for example, had the potential to be one of the most significant finds for an understanding of coins and their use in ancient south India thus far discovered. It contained alongside gold and silver coins and coin-like objects, around nine gold jewellery items, including rings, necklaces and wrist adornments (discussed below as evidence for the hoarding of coins alongside precious-metal jewellery).<sup>409</sup> Unfortunately, the jewellery was determined by the

---

<sup>406</sup> Turner (1980) 2.

<sup>407</sup> Bopearachchi (2006a) 182-3.

<sup>408</sup> Archaeological Survey of Ceylon (1923-4, 3).

<sup>409</sup> Gupta (1972) 1-2.

then Director of Archaeology for Andhra Pradesh to have no historical value. The pieces were consequently returned to the District Collector and vanished (presumably they were melted and used or sold as bullion). Though fortuitously the coins survived, the fate of the associated finds illustrates the rare but serious problem of mismanagement of artefacts by unqualified personnel, or as Gupta lamented:

This is one glaring instance of the irreparable loss that has happened by having a non-technical Officer in a technical department. The loss was realised only in October 1970, when the coins (items 7-9) were sent to me for examination and report; by then it was too late.<sup>410</sup>

The more positive side to the fragmented and often highly personal history of antiquities preservation in India is reflected by instances of unusual interest in numismatics or antiquities, such as that of the Madras Government Museum (below), but both negative and positive cases have ramifications for the reading of evidence and need to be examined alongside the coin data, and in all cases the Archaeological Survey of India provides a vital framework.

### **5.3 The Archaeological Survey of India (ASI)**

Since 1861 the ASI has sought to excavate and preserve monuments of the Indian past. From 1861 to 1866 it operated almost solely as the pet project of Sir Alexander Cunningham, followed by a break until 1871 when Cunningham revived it. His successor, James Burgess, was less successful and less determined, and the Survey was decentralised and its work disrupted by a series of restructuring efforts, before being permanently refounded in 1902 with a slightly larger staff (still only a maximum of eleven

---

<sup>410</sup> Gupta (1972) 2.

individuals).<sup>411</sup> Burgess did, however, succeed in 1886 in persuading the government of India to legislate against the excavation of any monuments by persons not approved by the ASI. This privilege is maintained under the Ancient Monuments and Archaeological Sites and Remains Act, 1958.

Its initial emphasis was on the Buddhist monuments of the north owing to the contemporary translation of Chinese texts which revealed for the first time in Europe that Buddhism originated in India not China, and Cunningham's memorandum urging the foundation of the Archaeological Survey to colonial authorities argued that it should

follow the footsteps of the Chinese pilgrim Hwen Thsang (Xuanzang), who, in the seventh century of our era, traversed India from west to east and back again for the purpose of visiting all the famous sites of Buddhist history and tradition.<sup>412</sup>

From 1902, the ASI was re-centralised after some experimentation with regional divisions, but retained distinct 'circles' covering the entire sub-continent and its remit increasingly included the preservation of all monuments, rather than a narrow focus upon Buddhism, though sub-disciplines such as numismatics received little attention.<sup>413</sup> This and much else about the ASI was changed by the appointment in 1944 of R. E. M. Wheeler, who was selected with the explicit aim of re-shaping and honing the Survey into a service which could be maintained by whatever post-independence administration the colonial government decided upon.<sup>414</sup> Wheeler's contribution to the cataloguing of the numismatic and archaeological evidence for Roman trade with India will be discussed

---

<sup>411</sup> Taddei (1970) 231, Trautmann and Sinopoli (2002) 500.

<sup>412</sup> Cunningham 1972[1866]: iv, cited from Trautmann and Sinopoli (2002) 497.

<sup>413</sup> Trautmann and Sinopoli (2002) 498 on its division and recentralisation. For the current 'circles' of coverage see ASI website.

<sup>414</sup> Chakrabarti (1982) 337.

later, but his recognition of the importance of numismatic evidence and his legacy to the Survey in terms of its interest in the question of Roman contact with India should be noted here.<sup>415</sup>



**Fig. 5.4:** *Map of the jurisdictional 'circles' of the ASI from 2006, highlighting the regions covered and the main administrative centre of each circle. For the purposes of this study, the circles centred on Thrissur, Chennai, Dharwad and Hyderabad are of particular importance. Those of Goa, Mumbai, Bhubaneswar and Kolkata are also of relevance.*<sup>416</sup>

---

<sup>415</sup> Wheeler (1951), Wheeler, Ghosh and Deva (1946).

<sup>416</sup> ASI website.

It is important to underline these developments in the interests of the ASI not only because they are directly relevant to the question of Indo-Byzantine contact, but also because they reflect a more general bias in the ASI, which undoubtedly grew out of the colonial context of its origins, and the perceived needs of post-colonial India: its research has since its inception been focused primarily on India at its periphery - its impact outside the subcontinent, or its links with the rest of the world. The initial interest in Indian society and Buddhism was explicitly related in the minds of the early researchers into ancient India (in particular, William Jones, President of the Asiatic Society 1783-94 and later, Alexander Cunningham) with proving that India had made a marked and lasting contribution to world history and also with justifying its incorporation into the new strand of world history which was in the process of being defined by western imperialism.<sup>417</sup> As part of his re-focussing of the Survey's attention, Wheeler continued to fix his gaze on the edges. His three foci for research were Indo-Roman trade, Taxila (an Indo-Greek city linked to the Indian exploration of Alexander the Great)<sup>418</sup> and, finally, the pre-historic settlement sites of the Harrappan or Indus Valley civilization.<sup>419</sup> These latter sites, located mainly in what is now Pakistan or the northern Indian Punjab, testify to one of the great pre-historic world civilizations, which flourished between 3000 and 1800 B.C. and had contact with the ancient civilization of Mesopotamia.<sup>420</sup> The message that the subcontinent had had an extremely long, involved and high-impact relationship with some of the other

---

<sup>417</sup> Chakrabarti (1982) 328.

<sup>418</sup> On the excavations of Taxila and its significance as an urban site with Indo-Greek cultural traits, Marshall (1951) and (1960) remain the best surveys.

<sup>419</sup> Chakrabarti (1982) 337 summarises Wheeler's range of contributions to Indian archaeology, including his selection of sites. Wheeler (1955) 188-9 reproduces a note jotted en route to India, demonstrating his very early desire to link the chronology of India to external markers, via its connection with Rome: 'A potential datum line is provided by the impact of roman commerce upon central and northern India, with the consequent deposition of Roman coins and coin-hoards of known date. The careful correlation of these coins with contemporary Indian cultures is an obvious starting point for research. It has not yet been attempted.'

<sup>420</sup> Possehl (1993) provides the fullest recent investigation of the archaeology of the Indus civilization.

great civilizations of the world, from ancient Mesopotamia and China to Alexander the Great and the Romans seems clear in such a range of interests.

The major consequences of the ASI's persistent focus on 'extra-Indian' Indian history for this study are twofold. First, Indo-Roman history has been extensively studied, but often forced into interpretative paradigms which are unsupported by the evidence. Second, Indian history on its own terms is sometimes less well understood than would be ideal. This is not wholly a product of ideology: Wheeler recognized in 1945 the possible advantage of linking Indian archaeology to the comparatively detailed and secure chronology of the Roman world owing to the lack of internal chronological markers, particularly in peninsular India. Epigraphy in the peninsula is datable only on the basis of palaeography and pre-modern Indian history is largely bereft of fixed chronological anchors. Nonetheless, the partially pragmatic decision of Wheeler to peg Indian archaeology to western evidence has lasted for longer and had a deeper impact than was, perhaps, envisaged. Close examination of local ceramic assemblages, for example, could be more extensive.

The excavation of the site at Pattanam in Kerala highlights the infrastructural barriers to such research: the site has yielded in less than a decade of systematic excavation over thirty million pot sherds, of which less than one per cent comprises foreign imports (predominantly Roman or southeast Asian),<sup>421</sup> yet it is publicised primarily as an Indo-Roman trading port, and has far more extensive links with the Indo-Roman research community than with research groups looking at regional networks within India for the

---

<sup>421</sup> Cherian (2011b) opens the report with the enclosed title 'Evidence for urban life with multi-cultural characteristics, Roman and west Asian contacts predominate' (1) before going on to summarise the huge quantity of local pottery fragments from the site (3).



simple reason that an Indo-Roman site will be reported by local media, and will attract more funding (internal and international), and thus a higher density of researchers and a larger selection of resources are available to such study.<sup>422</sup> A similar resource-generated bias is demonstrated by the work of Suresh on Indo-Roman trade, which seems to derive to a large extent from the availability of funding via the Italian Consulate.<sup>423</sup> As a consequence of this trend within the ASI and archaeological research more generally, the evidence for foreign contact with India often hovers uncomfortably above a vacuum where a picture of Indian circumstances should sit.

### ***5.3a Museum Collections in south India***

Under the umbrella of the ASI, jurisdiction over antiquities and responsibility for receiving and storing them is in turn given to a range of public museums and repositories. Among these there can be dramatic differences in policies, priorities and resources from one federal state to another, which in turn impact on the interpretative soundness of distribution maps for historical analysis. The four states which are the focus of this thesis are (clockwise from northwest to southeast) Karnataka, Andhra Pradesh, Tamil Nadu and

---

<sup>422</sup> Cherian (2011b) lists publications addressing the Pattanam site (36-8), one third of the titles of which make reference to the site's Roman connections or its identification with the Roman site of Muziris. This interest in Roman connections to the site is likewise reflected in news articles on the site: from a sample of 16 English-language articles from *The Hindu* in 2010, 7 refer directly to the Roman connection to Pattanam, 2 to its connections to the Persian world and all but one refer to the excavation by its title 'The Muziris Heritage Project', thereby demonstrating the implicit link between the prestige of the site and its ancient connections to the Roman world, whence this name derives. Articles: Unaccredited Slideshow (June 19 2010), Cherian (June 18 2010), Correspondent (Nedumbassery) (August 4 2010), Correspondent (Thiruvananthapuram) (December 15 2010), Nagarajan (June 2 2010), Pereira (September 20 2010), Special Correspondent (London) (September 21 2010), Special Correspondent (London) (August 3 2010), Special Correspondent (Kochi) (May 1 2010), Special Correspondent (Kochi) (March 22 2010), Srivathsan (May 1 2010), Srivathsan (March 14 2010), Staff Reporter (Kochi) (September 26 2010), Staff Reporter (Kochi) (May 16 2010), Staff Reporter (Kochi) (March 18 2010), Staff Reporter (Kottayam) (September 17 2010). The website of the Kerala Council for Historical Research also provides information about the public profile of this excavation site.

<sup>423</sup> Suresh (2007) forward, viii-ix.

Kerala. All finds of Roman or Byzantine coins should eventually find their way into the possession of a limited number of public museums, usually one per state, which functions as the store for the state department of archaeology. These museums, and in the case of Karnataka, the Department of Archaeology, form the core of the catalogue and published material on which this survey is based either via published records or personal examination. They are the Koyikkal Palace Museum, Thiruvananthapuram (Kerala), the Madras Government Museum (Tamil Nadu), and the Andhra Pradesh State Museum (located in the state capital, Hyderabad). In Karnataka finds of Roman and Byzantine coins are stored at the Mysore Department of Archaeology, Museums and Heritage, rather than in the State Archaeology Museum in Bangalore. The history of these coin collections and the implications of these histories for the present study will be examined here.

### *5.3a (i) Department of Archaeology, Museums and Heritage, Mysore (Karnataka)*

The Department of Archaeology, Museums and Heritage, located at the Palace Complex in Mysore, unusually has no direct link to an archaeological museum. Nevertheless, the department holds significant collections. It was founded in 1885, making it one of the oldest such departments in India and lists as its activities:

- 1) Exploration of archaeological sites and remains
- 2) Excavation of archaeological sites
- 3) Conservation of monuments
- 4) Epigraphical survey
- 5) Study of coins
- 6) Publication of research works
- 7) Maintenance of museums
- 8) Registration of antiquities and art treasures
- 9) Collection of antiquities and art treasures<sup>424</sup>

---

<sup>424</sup> <http://kannadasiri.kar.nic.in/archaeology/eng/activities.htm> (accessed 28/12/2011).

Of particular significance for this are points five and six, and the fact that the department holds the Akki Alur hoard of Byzantine gold coins, discovered in 1977. The previous scholarly publication of this, the largest verifiable hoard of Byzantine coins to be discovered on Indian soil, has been analysed in detail and highlights the difference which often exists between the rhetoric of institutional intent and the resultant output.<sup>425</sup> Access is not always straightforward even when clear procedures are in place. When published coins cannot be re-examined, the analyst must consider carefully the whole range of overlapping publications dealing with any examples, and the expertise of the scholars in question. In the case of the Akki Alur hoard at least three out of the four publications were by scholars with no experience dealing with Roman coins (to say nothing of Byzantine), and the absence of weights from all publications raised red flags for a numismatist, but

---

<sup>425</sup> The hoard has been published in part or in full on at least three occasions by different scholars, and is mentioned in reviews of Roman coins in India by Turner and Suresh. Berghaus (1991), Gupta (1984) and Nagaraja Rao (1980, 1987) have all published some or all of the coins in the hoard with varying levels of detail, but disagreement immediately becomes apparent. The most cursory and most recent handling of the hoard is by Berghaus, for whom it is only one piece of evidence in a larger article about later Roman gold coins in India. He presents one coin from the collection, with thanks to the director of the Mysore Museum for permission to use an image, along with a brief description of the hoard as containing 43 Byzantine *solidi* and three earlier *aurei*, attributed by Berghaus to Septimius Severus. He provides no weight for the coin in the photograph, which seems strange for a trained and published numismatist of great experience. Such oddities in the treatment of the hoard were, however, routine by 1991. Its earliest publication took the form of a brief notification of the discovery by Nagaraja Rao, then Director of Archaeology in Karnataka. This notification of such an important find occurred three years after its arrival in the department and contained incorrect information about the number of coins attributed to each emperor and the identity of the issuing emperors. The coins were not weighed or provided with individual descriptions. In 1984 Gupta, prompted apparently by the ‘indifference on the part of the Archaeological Directorate of Karnataka State’, re-published the hoard based on notes from a private viewing 1980 (the most recent record of anybody personally viewing the hoard). The coins are again listed without weights. In 1987 Nagaraja Rao, still Director of Archaeology, Museums and Heritage for Karnataka State, published the hoard again, this time more fully. This publication plagiarises Gupta heavily, to the extent that the numbers provided for the coins in the description and the accompanying plates do not match, apparently because Nagaraja Rao simply copied Gupta’s coin numbers, even though they do not concur with the order of the images. The plates represent the first images of the hoard but are almost unusable, being of extremely poor resolution. Subsequent efforts by the author to gain access to the hoard have resulted in a personal communication to the effect that the coins are unavailable owing to a technical problem with the lock of the museum safe. No information was provided concerning the length of time for which the safe has already been inaccessible and it was suggested that it was unlikely to be opened for at least another one or two years (information provided March 2010). In 2011 the author obtained copies of photographs, taken on an unknown date by Berghaus of the hoard (though without any attached notes). These revealed that all of the previous publications of this hoard had contained serious and inexplicable errors, for example, miscounting the number of coins in the hoard with two piercings.

may not have done so for archaeologists or historians reviewing the material.<sup>426</sup> Beyond this uncertain publication of the Akki Alur Hoard, the other Roman coins in the possession of the state of Karnataka have not been published.

### 5.3a (ii) Andhra Pradesh State Museum

The Andhra Pradesh State Museum, originally founded in 1930 as the Hyderabad Museum in order to house the collection of the State Department of Archaeology, is located in the Public Gardens, adjacent to the state legislature. The seventh Nizam of Hyderabad, Mir Osman Ali Khan, was keenly interested in the collection and preservation of the state's heritage and created the Department of Archaeology in 1915. He also took steps to extend the treasure trove legislation already in force in the areas of India under direct British rule to the princely state. His success resulted in the enormous expansion of the collection and consequently, the construction of the museum, fifteen years later.

The museum is a prominent research institution, associated with a number of high profile excavations of Buddhist sites in Andhra Pradesh and with the series *Epigraphica Andhrica*.<sup>427</sup> It also boasts 'a rich collection of coins said to be the second largest in the world, next to the British Museum, London. It has nearly 14,000 gold coins, besides

---

<sup>426</sup> For example, Sarma (2000) 146. Gopal (1995) 39 does not provide references for his article on a Byzantine gold coin from Lingsugur, so it is impossible to establish whether he relied upon the previously published accounts of the Akki Alur hoard, or upon his own observation, as he was in 1995 (and remains at the time of writing) the Director of Archaeology and Museums for Karnataka State. In either case, he further complicates the situation by commenting on the subject of double piercings on coins that '[i]n fact all the coins in the Akki Alur hoard have such similar holes', a statement which contradicts both the published literature on the hoard and the only available images of it). Ghosh and Ismail (1980) 13.

<sup>427</sup> For example Krishna Sastry, Subrahmanyam *et al.* (1992), Sastry, Bai and Rao (1984). The *Epigraphica Andhrica* series, published by the Government of Andhra Pradesh, currently runs to four volumes: Venkataramanayya (1969), Venkataramanayya and Parabrahma Sastry (1974a, 1974b), Parabrahma Sastry (1975).

‘100,000 silver, potin, lead, and copper coins belonging to various dynasties in general and particular in Andhra Pradesh’ [sic].<sup>428</sup> According to the accession register of the museum only fifteen of these coins are Roman (often with no further information provided), but the current Director of Numismatics in a personal communication with the author stated that the number of Roman coins in the collection is significant. Access to these coins, however, is difficult. The opening of the safe room is a complicated procedure which must be arranged with extensive prior notice and may even then not be possible due to unforeseen circumstances. The proximity of the state legislature, for example, can lead to the museum being closed down entirely to the public at limited notice for security reasons.

In addition to the practical difficulty of accessing the coins in Hyderabad, it is a collection which has not been exploited as far as one might expect given the museum’s significant investment in numismatic material and its strong history of research. The only two publications listed by the museum’s website on the subject of numismatics are a 1992 survey of Roman gold coins and a 2001 publication of *Gold coins of Kakatiya*.<sup>429</sup> The collection of the State Museum is also not included in Turner’s 1989 survey of Roman coins up to Constantine and was not able to be included in this study for the reasons outlined above. The precise nature of its Roman and Byzantine coin holdings remains unclear.

---

<sup>428</sup> Andhra Pradesh State Department of Archaeology (accessed 20/12/11).

<sup>429</sup> Krishna Sastry (1992), Subrahmanyam and Joginaidu (2001).

### *5.3a (iii) Madras Government Museum (Tamil Nadu)*

The Madras Government Museum has a prominent place in the investigation of Roman coins in India, and has the largest public collection in India. It was founded in 1851 under the directorship of Dr Edward Balfour, medical officer of the bodyguard of the Governor of Madras. Much of the publication of coin finds through the museum has been discussed in chapter two and the museum also housed many of the initial finds from the site of Arikamedu (see chapter seven). The centrality of the Madras Government Museum to Indo-Roman research can thus be attributed in part to the particular interest of a series of numismatic directors. This is a particular and on-going strength of the museum, reflected in the recent re-modelling of the numismatic gallery in order to offer a more visual experience to visitors.<sup>430</sup>

Since 1878 the museum has had theoretical jurisdiction over any coins and other antiquities found in the Madras Presidency, and subsequently the federal state of Tamil Nadu. In addition, the museum sharing schemes of the British Administration enabled the museum to obtain coins from Mumbai and the Indian Museum in Kolkatta. In total, the Museum holds over two hundred Roman or Byzantine coins, including a loan from New Delhi listed in the present catalogue (no. 55). Those pre-dating Constantine I were published in 1989 by Turner. Full access to these coins was provided to the author on two research visits in 2010 and 2011. While the museum collection may be extensive and freely available, however, its records are not as full as might be wished. For many coins no

---

<sup>430</sup> Original coins are rarely displayed due to security risks, so the gallery has pioneered a technique of displaying coloured plaster copies beside large fibreboard models of coins to highlight their minute details. Nevertheless, though the gallery offers a general view of world coinage and the development of south Indian coinage, Roman coins from India are not displayed.

provenance is given, for others the information provided is cursory, for example, ‘purchased in Trichy’.<sup>431</sup>

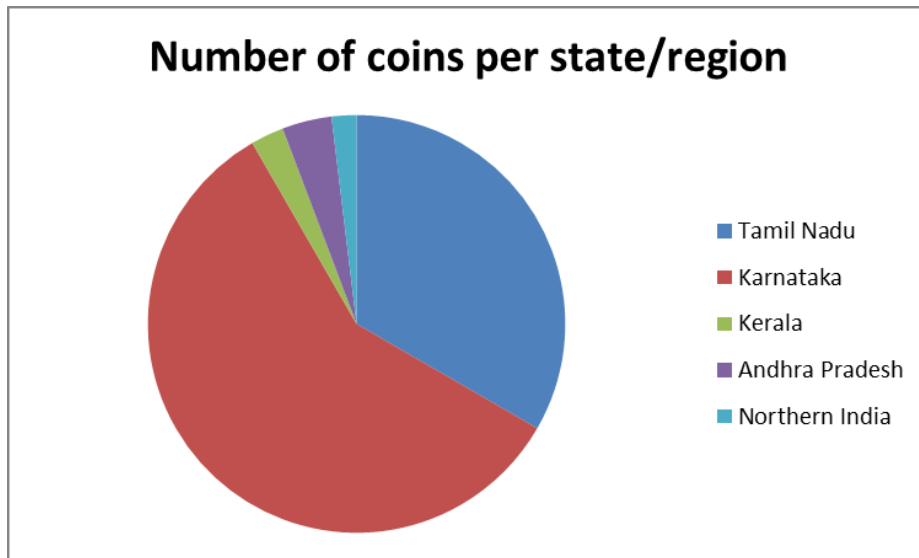
An understanding particularly of the unique historical role the Madras Government Museum has played in the publication and storage of Roman and late Roman coins in India is crucial for evaluating the significance of distribution patterns of coin finds to historical narratives. Turner in her analysis of Roman coins, for example, relies heavily on distribution maps to draw conclusions about trade relationships.<sup>432</sup> The use of distribution maps to correlate artefacts with cultural contact has been given new impetus in studies of Late Antiquity by McCormick’s *Origins of the European Economy*, which relies heavily on mapping artefacts found outside their original cultural context.<sup>433</sup> In the case of Late Roman coins in India, however, serious doubts attach to such an approach. If precious-metal coin finds are tabulated for each of the four states of south India the results are as follows:

---

<sup>431</sup> Turner (1989) 116.

<sup>432</sup> Turner (1989) 119-121.

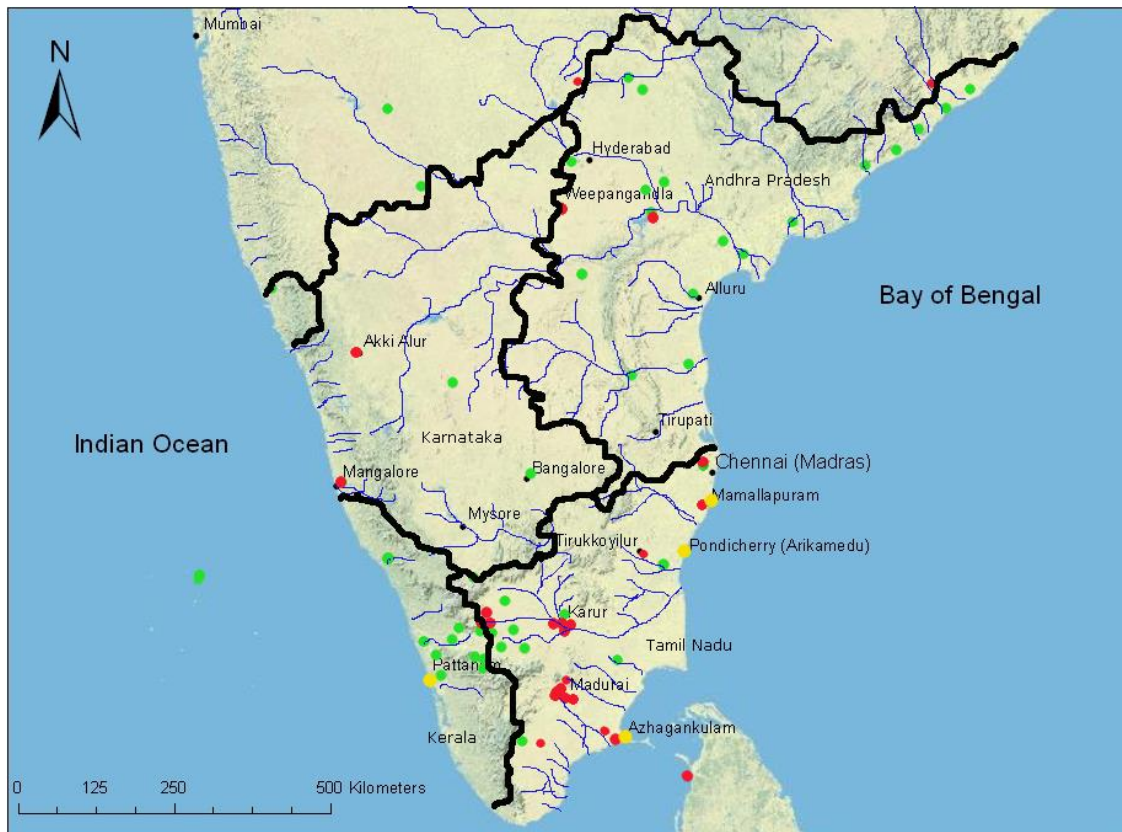
<sup>433</sup> McCormick (2001) 56-7, 159, 325, 355, 358, 362, 365, 374, 446, 619, 643, 676, 686 (using coin distribution), 705, 762.



**Fig. 5.5:** *Distribution of late Roman gold coins by state in India, plus northern Indian finds. Total figures: Tamil Nadu = 52, Karnataka = 91, Kerala = 4, Andhra Pradesh = 6, Northern India = 3.*

This data can also be mapped as follows, though for a smaller number of coins, since in most cases it is possible to trace a coin find to its state of origin but detailed provenance is often lacking:





**Fig. 5.6:** *Distribution map of Roman (green) and late Roman (red) coins in India with major cities marked.*

Both methods of displaying data demonstrate the preponderance of coin finds in Tamil Nadu (and the comparative absence of coins from Kerala). Geographically and based on written sources this seems counter-intuitive if coins are seen as evidence for the specific routes by which Romans or Roman goods entered and travelled within India. Written sources from the first to the sixth century refer to ports on the western coast of India and make vague, often confused references to the lands beyond, naming ports probably located on the east coast, which archaeologists have long tried to link to sites such as Arikamedu.<sup>434</sup>

<sup>434</sup> Suresh (2010) 28-9, Wheeler, Ghosh and Deva (1946).

As this methodological focus on collecting demonstrates, however, the reasons for such a distribution pattern may not be entirely, or at all, linked to ancient trade. The significant resources and time invested by several museum directors and numismatic directors at the Madras Government Museum into the collection of Roman coins has contributed significantly to their visibility in this state, as has the remarkably full publication of the museum's collection in comparison to those of other states. Other factors unconnected to historical use may also contribute to this distribution. Looking at the two southernmost states, Kerala and Tamil Nadu, for example, Kerala's thick vegetation and east-to-west riverine system, which in turn leads to steady land erosion, may conceal or have washed to sea many coins over the centuries (though such speculations from absent evidence can never be invested with too much significance), whereas Tamil Nadu has a more arid climate and open landscape.<sup>435</sup>

As it happens, failure to consider sufficiently the implications of collecting history and state resources has become deeply entrenched in research into Indo-Roman trade, with a demonstrable impact upon published interpretations of the evidence. The assertion that the regions now included in the federal state of Tamil Nadu must have been most deeply involved in trade with the Mediterranean due to the concentration of coin finds in the state can be found in numerous studies.<sup>436</sup> Alternatively, the preponderance of coin finds from Tamil Nadu is commented upon, without explicit conclusion, but also without any contextual information about the history of recovery and publication in the various states.<sup>437</sup>

---

<sup>435</sup> India Planning Commission (2008) 153.

<sup>436</sup> Kandaswamy (1984) 41, Nagaswamy (2007), Nilakanta Sastri (1958) 135-6, Shastri (1992) 133.

<sup>437</sup> Krishnamurthy (2006a) 172, Radhakrishnan (1996a) 121.

### 5.3a (iv) Kerala State Department of Archaeology

The Kerala State Department of Archaeology was created in its present form in 1956 as a consequence of the integration of the archaeology departments of the states of Cochin and Travancore and the ancient monuments and sites of the District of Malabar, which had formerly come under the jurisdiction of the Madras Presidency. Its earliest progenitor in the region, however, was the initially one-man Department of Archaeology of the princely state of Travancore. This was established in 1891 for the purpose of studying inscriptions in the state. As such, the inauguration of archaeological study matches the pattern of other regions of south India, in which epigraphy was the fundamental concern of the authorities. The current Department of Archaeology of Kerala State is unusual, however, in that its emphasis remains heavily textual, with a focus on palm leaf manuscripts, standing monuments and inscriptions.

It is also unusual in having a dedicated numismatic museum, founded in 1991 in the Koyikkal Palace in Thiruvananthapuram. The palace itself is a heritage building, and also houses a museum of folklore. The numismatic museum displays both local and foreign coins, including nineteen Roman *denarii*. The very few Byzantine coins from Kerala are considered here in their published form; the unexpected scarcity of Roman or Byzantine coins found in Kerala is discussed in chapter six in terms of historical phenomena and geographical factors. Nevertheless, numismatic research is not mentioned among the objectives of the Department of Archaeology:

The Kerala State Department of Archaeology has been revived in 1959 to carry out systematic and scientific work in all the branches of Archaeological Research such

as

- 1) Epigraphy
- 2) Excavation and exploration
- 3) Preservation and Conservation
- 4) Museums
- 5) Research and Publication and
- 6) Archaeological Gardens.<sup>438</sup>

### ***5.3b The role and importance of private collectors***

Private coin collectors in India (as elsewhere) operate largely on the basis of personal networks and mechanisms. As such, coverage of private collections by a researcher is extremely difficult. Coin collecting has, however, been a popular hobby in India for some time.<sup>439</sup> Private collections or records of private collections often preserve information about late Roman or Byzantine coins in India which would otherwise be lost. Where collectors do not make public their own collection, however, the very limited market for late Roman coins in south India reduces the possibility that such coins in the stock of antiquities dealers will come to light.<sup>440</sup> Thus on the one hand private collections may preserve and even bring to light material not covered by the ASI and information about now lost private collections has contributed data to this study. On the other hand they may constitute a channel which can direct antiquities away from public availability, and however open collectors choose to be about their possessions, private collections have

---

<sup>438</sup> [http://archaeology.kerala.gov.in/index.php?option=com\\_content&view=article&id=12&Itemid=11](http://archaeology.kerala.gov.in/index.php?option=com_content&view=article&id=12&Itemid=11) (accessed 15/12/2011).

<sup>439</sup> Gupta (1969).

<sup>440</sup> During the author's field research in February 2011 a coin dealer in Chennai offered a *folles* of Justin I and Sophia for 600 IR, a price which presumably responded to a potential European buyer with a clear interest. The dealer claimed to have had the coin in his stock for over three years. Comparable coins retail online for between US \$35-90 (VCoins: <http://search2.vcoins.com/results.aspx?suid=1a242ffd-20e2-48c6-806b-4ee9f760f70d> – consulted 08/01/2012). According to conversion rates as of 08/01/2012, 600 IR are worth approximately US \$11.40. While only an isolated instance, an asking price of one third of the lowest market value of the coin by an experienced and successful antiquities dealer suggests how unfamiliar and unmarketable such coins are in south India.

more limited power than museums to withstand the passage of time. Collections are bought and sold, and split up, and records of their construction are lost. Thurston's 1894 reference to the Tracey Collection, for example, demonstrates that Rev. Tracey was a sufficiently well-known and legitimate collector for Thurston to publish elements of his collection with his permission.<sup>441</sup> Nevertheless, Thurston's summary is now the only record of them.

Beyond these records of vanished collections, the general considerations pertaining to private antiquities collecting have particular relevance to a study of Indo-Byzantine exchange, since in one case private collection has led to the publication of a substantial and unique body of evidence in which the ASI and its representative museums in Tamil Nadu have shown no apparent interest. The collection of Dr R. Krishnamurthy (Chennai) is the world's largest of late Roman copper coins found in south India. His relationship with the professional archaeological services of India provides a useful illustration of the wider questions surrounding collecting habits and the interpretation of Indian numismatic material. This relationship, while illustrative is, however, far from typical (insofar as a typical situation exists). The following analysis therefore seeks to highlight and distinguish both the general and specific features of Dr Krishnamurthy's case.

Krishnamurthy is in many respects the outstanding example of amateur interest in Indian numismatics.<sup>442</sup> As the co-heir and editor of *Dinamalar*, one of the largest

---

<sup>441</sup> Thurston (1894) 29.

<sup>442</sup> There is one final institution, which warrants consideration in an effort to contextualise Byzantine coins in India. It uniquely spans the divide between amateur, scholarly and governmental interest and may be regarded as a unique feature of the Indian numismatic scene. The Indian Institute of Research in Numismatic Studies (IIRNS) is located at Anjaneri, approximately twenty kilometres outside Nashik (Maharashtra). The Institute was founded in 1980 as a result of collaboration between P. L. Gupta, one of India's most prominent

circulating Tamil daily newspapers, R. Krishnamurthy has significant resources to invest in his numismatic interests.<sup>443</sup> From 1980 his primary focus has been late Roman copper coins found in Tamil Nadu, though he has also collected and published articles and monographs on early south Indian coin types and ancient non-Roman foreign coins found in Tamil Nadu.<sup>444</sup> Apart from the scale of his collection, which consists of several thousand late Roman coins, Krishnamurthy is unique for the extent to which he has published and undertaken research into his collection, including submitting a selection of his coins for metallurgical analysis. These publications are lavishly illustrated and provide detailed descriptions. They do, however, represent a more purely numismatic than archaeological interest. Little historical commentary is provided with the coins and the primary interest of the historical discussions where they occur is to demonstrate the historical significance of the Tamil-speaking areas of south India to global exchange networks.<sup>445</sup>

---

numismatists and for many years the Keeper of Coins at the Indian Museum, Kolkata, and K. K. Maheshwari, a wealthy industrialist and keen coin collector. The resultant institution maintains, amongst other things, a library, over one and a half million photographs of coins on filed index cards, a scholars' residence and a press. It also organises courses of study which are endorsed and attended by personnel from Indian universities and the ASI as well as private researchers (Indian Institute of Research in Numismatic Studies. For the purposes of this study, the Institute has limited direct relevance: it does not house a collection of Byzantine coins. Its wider involvement in energising and centralising the numismatic community in India must, however, be borne in mind. The many publications of Roman coins found in India have contributed to the development of this study, and have made data available which might otherwise have remained unknown. The *Numismatic Digest*, the annual journal of the IIRNS, provides a national platform for notifications of discovery and numismatic analysis, and has published many of the notifications and articles in question (for example, Carson (1980), Gupta (1984), MacDowall and Jha (1992)). It is also worth noting here that the IIRNS has been closely associated with an on-going project by D. W. MacDowall and J. Howell to record Roman antiquities in India. In 1999 the Annual Report of the South Asian Society reported that this work was in the final stages of editing, but it has never come to print (Council of the Society of South Asian Studies (1999) 10). It is cited here as evidence of the research promoted by the Institute, and also a further indication of the continuing trend towards focussing on external links with India even outside the circles of the ASI.

<sup>443</sup> Dinamalar Corporate Information.

<sup>444</sup> Krishnamurthy (2007, 2006a, 2006b, 2005, 2004, 2000, 1999, 1998, 1994, 1993), Krishnamurthy and Wiekramasinghe (2005).

<sup>445</sup> For example, Krishnamurthy (1999) 62, (1994) 113.

The coins in which Krishnamurthy is interested also warrant some examination as symptoms of larger trends in antiquities management in India. While all precious metal coins in the catalogue of this study are located in public museum collections, Krishnamurthy has collected thousands of copper coins from the riverbeds of the Amaravati in Karur and the Vaigai in Madurai, as well as, more recently, the Then Pennai River through Tirukkoyilur. When he first began collecting these coins, Krishnamurthy claims that they were being sold by weight as scrap metal. Such finds have washed up in these areas for over thirty years and have been published by Krishnamurthy in various forms since 1991.<sup>446</sup> In this time no interest appears to have been shown in the finds from these riverbeds by the ASI. Finds of such low individual value are unlikely to be submitted by the finders to the ASI as treasure, and in any case, an entire sub-industry of antiquity hunting has developed along these rivers, in part supported by the knowledge that a major collector such as Krishnamurthy will pay for discoveries of late Roman copper coins.<sup>447</sup> The importance of private collecting in this case lies in the fact that it has preserved a body of evidence which would otherwise have been lost.

Krishnamurthy's role as a private collector also highlights the tenuous links between private collectors and government organisations in south India. This uncomfortable relationship may stem from a desire to avoid any complicity in illegal antiquities trading. The ASI and the public museum system in India, therefore, may be avoiding the appearance of impropriety by distancing itself from the community of private

---

<sup>446</sup> Although their current recorded history of discovery spans only the last few decades, there is a record from 1889 concerning the discovery of what were then considered imitation copper Roman coins being washed out of rivers in the Madura region. Though no further record of these survives it indicates that the process of their discovery in the river may have been of some considerable duration, and lends support to the account that these coins may at various points have been discovered in very significant quantities, though any further speculation is impossible (Campbell Tufnell (1889) 29).

<sup>447</sup> Day (In Press).

collectors, both legitimate and illegitimate. While laudable from the perspective of opposing illicit antiquities dealing, this situation can reach almost comic heights of scholarly apartheid. In January-February 2011, for example, the Madras Government Museum hosted an exhibition on Indo-Roman trade, which placed genuine and imitation Roman coins from its own collection on public display for the first time. These were presented alongside textual and other evidence for Indo-Roman trade, such as beads and spices.<sup>448</sup> The exhibition, focussing on the importance of Tamil Nadu in India's historical connection to the Roman Empire, made no mention whatsoever of the huge and extensively published collection of late Roman copper coins in Dr Krishnamurthy's possession, and stored less than a mile from the museum.

The division between amateur and official scholarship finds a partial meeting ground in the university system, and in the scholarly societies of the subcontinent. The major numismatic journals are those of the societies, including the *Journal of the Numismatic Society of India*, and the *Journal of the South Indian Numismatic Society*. They publish contributions by amateur collectors and government-employed scholars and the annual meetings of these societies attract members of both communities. The use of universities as hosts of these meetings further emphasises the serious scholarly credentials of these societies.<sup>449</sup>

---

<sup>448</sup> Day (2012).

<sup>449</sup> The 2011 Annual Conference of the South Indian Numismatic Society (SINS) provides a demonstrative case study. Held at the Sri Venkateswara University in Tirupati, one of the leading research universities in India, and including contributions by a wide range of scholars and amateur coin collectors, the proceedings are published in *Studies in South Indian Coins* 4, and fully reflect the meeting of interests at this conference. The conference was also accompanied by a coin fair, which welcomed dealers and collectors from across south India.



### *5.3c Using published data*

As the above analysis of museum collections, the Archaeological Survey of India and the involvement of private coin collectors demonstrates, the late Roman and Byzantine coins in India cannot be perceived as a temporal window. A willingness to take the numismatic data as an uncomplicated source of quantifiable historical information has demonstrably undermined various prior studies of Indo-Roman trade. As already stated, however, an awareness of the full context of the coins does not negate their value as historical evidence. It only necessitates a more nuanced approach. An element of this approach consists of the choices made in creating a useful dataset from which to derive conclusions about fourth- to seventh-century networks of exchange between the Mediterranean and the Indian Ocean. The following examination of the coin evidence for economic and social history uses elements of quantitative analysis alongside object-based case studies of various coin types and modifications applied to coins. In cases of quantitative analysis all figures are derived primarily from the catalogue of late Roman coins (Appendix 1), the sources for which are listed in the catalogue preface. These are supplemented, where stated, by numbers derived from named publications, either in order to make use of earlier Roman or copper coins, neither of which feature in this catalogue owing to their extensive publication elsewhere, or to incorporate coins which have been published but which have since been lost or which were not available for viewing as part of this project.

## **5.4 Coins as economic history**

The foregoing methodological examination explores the problems with generating purely quantitative (or, in a similar vein, distributional) answers to questions about Indo-Byzantine exchange. Notwithstanding these caveats, however, and accepting that the total dataset is in some cases quite small, quantitative approaches can provide some indications of broad historical patterns which, when correlated with other evidence, provide insight into the shape of historical contact between the Mediterranean and the Indian Ocean. In other instances, quantification, while not statistically significant due to small samples, may provide a useful way of visualising trends, and illustrating phenomena, which are in turn worthy of closer consideration on a case-by-case basis.

### ***5.4a Chronological patterns and the termination of coin finds***

Chronological patterns of coins finds have most often been subject to quantitative approaches. Such quantitative approaches may categorise coins by period (Fig. 5.7), by century (Fig. 5.8), or by the emperor under whom they were minted (Figs 5.22. 5.23) but all rest on the same assumption: that the date at which a coin was struck (either in absolute or relative terms) correlates with its movement to India. This assumption is maintained in the present study but it is not an uncontested position and the reasons for challenging it, as a major trope in Indo-Roman studies, are worth addressing before continuing with any chronological analysis of the numismatic evidence.

### ***5.4b Stockpiling and selecting coins for use***

While the earliest substantial finds of Roman coins in India are generally assumed to correlate with the beginning of Roman trade with the subcontinent, subsequent patterns of coin finds are often considered to be representative not of a continual movement of specie to India, which might thus provide some basis for establishing chronological patterns of trade, but rather as evidence for the periodic selection of specific coin types for movement to India. Turner comments, for example, that:

The reasons for the predominance of the two types are probably connected with their fineness and, more importantly, their availability as common types, which the Indian traders found easily recognizable.<sup>450</sup>

The very large number of heavy, pre-reform *aurei* of Nero found in India have also led Turner and others to suggest that such *aurei* were collected by merchants even after the reform, then used for trade with India owing to their greater local popularity.<sup>451</sup> It is here argued, however, that the case for demonstrating intentional stockpiling cannot be made convincingly on the basis of present evidence.

While there is more data for the examination of early than late Roman coins in India, the total numbers from which theories of stockpiling are built remain fairly small. A grand total of around 6000 precious metal specimens renders the quantity of any specific type statistically of limited significance. Such numbers, however, could be suggestive if compared with secure data concerning the circulation of coin types within the Roman Empire. Such comparable data, however, is extremely difficult to generate. Studies of

---

<sup>450</sup> Turner (1989) 23.

<sup>451</sup> Turner (1989) 34.

Roman coins are derived mainly from two sources: museum and private collections (and publications thereof), and excavation reports detailing coin finds, especially of hoards. European and US museum collections have long been acknowledged to provide a poor basis for assessing circulating coinage.<sup>452</sup>

Excavation reports may provide a more representative indication of some sorts of circulation but are limited to single sites and heavily reliant on the accurate recording of coin finds. Hoards have generally been considered the most reliable data source (though with many caveats).<sup>453</sup> In constructing a comparative dataset against which to interrogate finds from India, however, it is particularly relevant that the vast majority of excavated and published hoards come from Western Europe.<sup>454</sup> Since coins moving to India would in all probability have been taken from circulation (in typical or atypical quantities) in the Eastern Empire, this geographical bias is extremely problematic. Given these difficulties in assessing what a 'typical' circulating volume of coin types may have been, there can be no numismatically reliable basis for establishing stockpiling of specific coins in Indian contexts. Furthermore, such a hypothesis does not take into account the possibility that coins may have been selected for preferential hoarding in India, with less desirable coins being melted and is not based on strong arguments for the motivation for stockpiling. Imitations of coins produced in India (discussed below) demonstrate that if specific types were more desirable they could be produced on site, without paying over the odds for them and the argument that some types were more 'trusted' than others implies a low level of skill in assessing bullion on the part of Indian merchants for which there is no evidentiary basis.

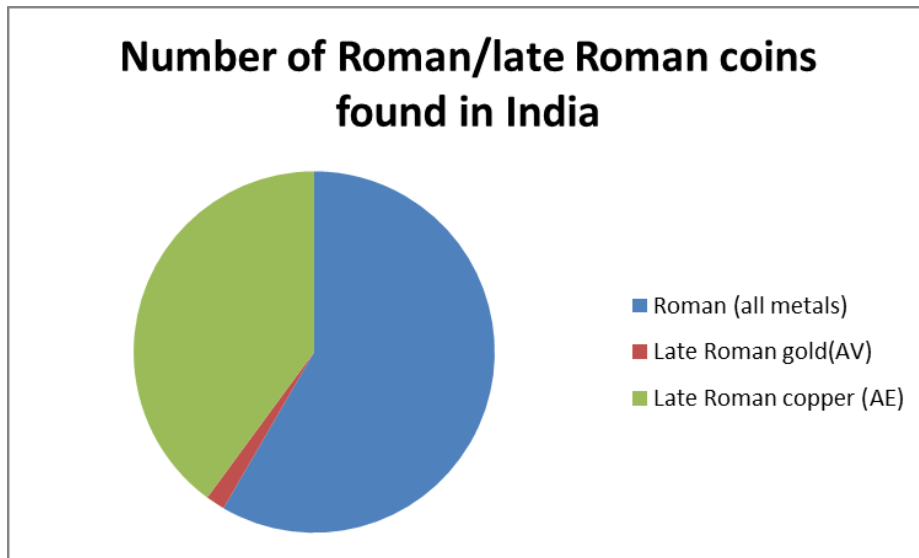
---

<sup>452</sup> Noreña (2001) 148.

<sup>453</sup> Noreña (2001) 148-52.

<sup>454</sup> Noreña (2001) 150-2; Van Heesch (2011) 316-17.

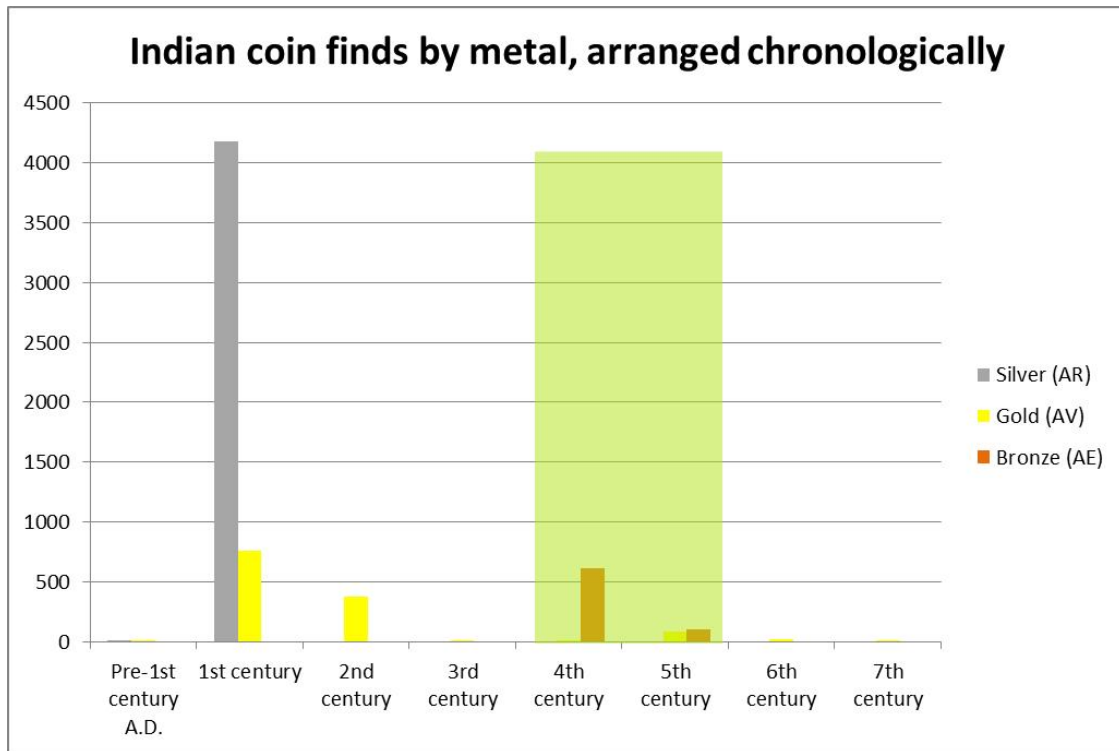
In short, therefore, despite the ingenious suggestions put forward, there is no convincing evidence that certain types of coinage were stockpiled to be sent to India at any point. The chronological data presented here thus assumes that coins arrived in India roughly at their time of minting, or after a fairly uniform and unidentifiable lag, thus coin types by emperor are considered indicative of rough order of arrival in India, if not actual time of arrival. This is not assumed to be an accurate reflection of events. There are numerous factors which could have distorted such a correspondence of date of issue and date of arrival in India. Nevertheless, such an assumption is at least clear about its limitations, provides some means by which to display the data, and introduces the most limited range of speculations into calculations. In places its correspondence to other historical processes, such as the decline in coin finds in the third century, when the Roman Empire was embroiled in a series of crises, is suggestive that while these assumed correlations may be imprecise, they are not fundamentally incorrect. Having outlined the reasons for taking such an approach to chronology, it must still be stated that the following quantitative analyses are intended to be suggestive only and that they rely on identifying broad patterns.



**Fig. 5.7:** *Proportion of Roman and late Roman precious metal coins discovered in India. Total figures: 189 late Roman gold, 4405 late Roman copper and 6446 Roman (of which 4792 are silver).*<sup>455</sup>

Arranging the coins by metal and by century allows for slightly more sophisticated conclusions. Here the decline in total coin numbers in the third century is clearly visible. The final cessation of coin imports to India in the sixth century is also visible, with only a couple of trailing examples into the early seventh, as the Roman Empire faced war in the west and east and the outbreak of a major pandemic.

<sup>455</sup> Data for Roman coins of the first to third centuries taken from Turner (1989) supplemented by Satyamurthy (1992) and Subrahmanyam, Rama Krishna Rao and Brahma Chary (2008). This should be taken as a rough guide only since hoards discovered and documented especially in the nineteenth century which, though substantial, were never recorded in sufficient detail to determine precise numbers of finds have been left out.



**Fig. 5.8:** Roman and late Roman arranged chronologically and by metal. The green bar marks copper coins from the Krishnamurthy collection which cannot be dated specifically to the fourth or fifth century.<sup>456</sup>

The final collapse of trade and its causes remain, however, one of the most difficult transitions to understand, as the late Roman phase of commerce with India gave way to the early expansion of Muslim trading networks into the Indian Ocean. The Arab conquests of the seventh century, which denied the Byzantine Empire direct access to the Red Sea, are

<sup>456</sup> Based on: the current catalogue, excluding imitations which cannot be attributed to a single emperor's prototype, Turner (1989), Satyamurthy (1992) and Subrahmanyam, Rama Krishna Rao and Brahma Chary (2008) and Krishnamurthy (2007) (illustrated examples only). As above these figures are intended to be suggestive only. From published material, finds for which numbers are cannot be determined have been omitted, as have finds listed as 'unidentified' and therefore impossible to assign to a specific century or reign, and finds from modern Pakistan. Imitations which can be identified are counted alongside their prototypes. The green block spanning the fourth and fifth centuries represents the 4120 unidentifiable coins from Karur in Krishnamurthy's collection. In these cases the coins cannot be assigned to an issuing authority and therefore a century but there is no reason to doubt that they date to the same range as the examples which can be dated. For emperor's whose reign spans a century, and especially for which types cannot be dated to a specific year, their coins have been assigned to the century in which they reigned for the largest number of years (marked in Appendix 6). Total figures for the above table are: Pre-1<sup>st</sup> century A.D.: AR = 7, AV = 6, AE = 0; 1<sup>st</sup> century: AR = 4174, AV = 756, AE = 0; 2<sup>nd</sup> century: AR = 0, AV = 378, AE = 0; 3<sup>rd</sup> century: AR = 0, AV = 12, AE = 0; 4<sup>th</sup> century: AR = 0, AV = 1, AE = 616; 5<sup>th</sup> century: AR = 0, AV = 84, AE = 101; 6<sup>th</sup> century: AR = 0, AV = 21, AE = 0; 7<sup>th</sup> century: AR = 0, AV = 2, AE = 0. For full tabulation of this data, see Appendix 6.

generally cited as having caused the collapse of Byzantine trade and the takeover by the Umayyad Caliphate of trade routes to India.<sup>457</sup> Numismatic evidence cannot provide a clear picture of the processes by which Umayyad trade came to dominate in the Indian Ocean but it offers a contribution. A very few examples of coins of Heraclius point to some continued contact into the seventh century but these are extremely rare finds in India (two in total) from which generalisations are difficult to make. Furthermore, coins of Heraclius or based on Heraclian design circulated in the early Umayyad Caliphate, so Heraclian gold coins, especially in such small numbers, cannot be regarded as evidence for the on-going participation of merchants in this trade who regarded themselves as belonging to the Roman Empire.<sup>458</sup> Of greater importance, perhaps, than these outlying Heraclian coins is the generally much earlier date for the cessation of significant numbers of coins. Numismatically, the reign of Justin I marks a major watershed. Coins of later emperors are without exception unusual finds. This suggests that by the first half of the sixth century direct access between India and the Red Sea had declined to a level at which transfer of goods (i.e. precious metal coins) had become negligible. A number of factors may have contributed to such a decline in trade.

Nappo has suggested that Indian Ocean trade was effectively ‘outsourced’ to clients of the Roman Empire in the form of the Aksumites, in an argument which uses the synchronicity of the decline in Roman coin finds in India and the account of Prokopios already explored in chapter four.<sup>459</sup> As chapter four highlighted, however, there is insufficient evidence either for the cultural and political reliance of Aksum on Rome or for the centrality of India trade to the Aksumite state to accept this argument without caution.

---

<sup>457</sup> Tomber (2009) 161, Sidebotham (1986c) 300.

<sup>458</sup> Foss (2008) 22-5, 99-105.

<sup>459</sup> Nappo (2009) 76.



Justin's then Justinian's wars with Persia and the west of the Empire may have reduced the disposable wealth of the Empire and thereby reduced demand for Indian luxuries, and the increased vulnerability of Red Sea ports to Persian attack may have contributed to a decline in commerce. It is difficult to draw secure conclusions from yet another small dataset but the finds of late Roman coins along the land route to the east into China appear to expand in number around the reign of Justin II (A.D. 565-574), suggesting that traders temporarily replaced the maritime route with overland trade before the securing of Caliphal trade routes in the ninth century marginalised Byzantium as a long-distance commercial participant in the east.<sup>460</sup>

#### ***5.4c Copper coins in India***

Beyond the chronological changes already highlighted, the occurrence of large quantities of copper coins stands out sharply. With one exceptional period and category of finds, Roman and late Roman copper coins with a secure Indian provenance are very rare. Museum collections often contain a small selection of copper coins, but it is sometimes unclear whether these were discovered in India or were later bequests.<sup>461</sup> A hoard of copper coins was also published by Hahn in 1980 with a stated Indian provenance though Hahn himself argues that it almost certainly derived from Egypt. In any case it seems to have been a purse find and could therefore have been a single loss, from which broader conclusions about trade patterns would be almost impossible to derive.<sup>462</sup> This preponderance of gold and silver may reflect for most of the Roman and late Roman

---

<sup>460</sup> Wang (2004) 34, Morrisson (2001) 963.

<sup>461</sup> In the Madras Government Museum, for example, a number of coins have no known provenance but are understood to have been acquired from Europe in the nineteenth century. Personal communication by the current Keeper of Coins and Medals, Mr R. Sundararajan, April 2010.

<sup>462</sup> Hahn (1980).

phases of trade actual proportions of transported metal. Textual sources emphasise the desirability of precious metals and the goods bought in India were high-value commodities such as silk and spices.<sup>463</sup> There is, however, the exception, so striking in Fig. 5.8, and already referred to with respect to the private collecting of R. Krishnamurthy, of the thousands of copper coins mainly discovered in rivers in Tamil Nadu.

These coins demonstrate a range of features which are distinct from the gold and silver coinage found in India. In particular, they are, with the exception of the possible purse find mentioned above, never found in hoards. Instead, the majority have been washed up in rivers and show signs of great wear, though it is unclear whether this is as a result of time spent in the river or previous use. They also date, as the graph above indicates, to quite a narrow period of time. Their transportation to India, uses there and the causes for their eventual deposition, though, remain extremely mysterious. Nevertheless, they do shed important light on India's relationship with Lanka in this period, and to some extent, Lanka's engagement in wider trade relations.

#### ***5.4d Copper coins and Lanka***

The discovery on Lanka of large quantities of late Roman copper coins is fairly well-known in Indian Ocean and Indo-Roman studies, and these, alongside the copper coins from India are frequently discussed as evidence for the participation of south India and Lanka in trade with the Roman Empire. It is here worth addressing the finds from Lanka in their own terms before returning to their probable connection with copper coin

---

<sup>463</sup> See chapters three and six.

finds in India, since it both illustrates the difficulty of working with evidence of ancient Lankan commerce and the problems of interpretation which have been applied to it.

Lanka has, since the eighteenth century yielded numerous finds of copper Roman coins and imitations of them, made on the island. These have been found in hoards and sometimes as single finds in archaeological excavation. The argument that these coins testify to Roman trade with Lanka, and especially a particular chronological or geographical shape to that trade, is however difficult to make convincingly, especially based on current publication of the finds. One strand of literature on the subject includes vague and unsubstantiated references to tens and even hundreds of thousands of coins, none of which have ever been fully published or documented.<sup>464</sup> Alongside dubious numbers of coin finds, the representation to be found in the literature that these coins are found at port sites on the island does not adequately reflect the fact that in this context ‘port sites’ are identified solely on the basis of a coastal or riverine location and the nearby discovery of a coin hoard (often precisely one of those hoards which has not been properly verified).<sup>465</sup>

Analysing the competing accounts of ancient Lankan commerce from a purely numismatic perspective, the discovery of Roman coins on Sri Lanka has been securely documented since the nineteenth century and has been used frequently and alongside references to the island in classical sources, most notably the *Christian Topography*,

---

<sup>464</sup> For example, Bopearachchi (1997) xiv-v, (1995) 131. It is unfortunately this accounting of the coins which has substantially permeated the secondary literature, in which Sri Lanka is regularly referred to as a significant participant in trade with the Roman Empire (for example: Boulnois (2005) 137; Choksy (2013) 380; Francis (2013b) 57-8; Hendy (1985) 277).

<sup>465</sup> Bopearachchi (1998) 149. The effect of this circularity is most clear from the map provided by Bopearachchi (2004) 63, which pinpoints ‘Location of coin finds and ancient ports’ without clarifying whether these two features should be interpreted as synonymous, or if not, how they are being distinguished.

already discussed, and the *Natural History* of Pliny to argue for Sri Lanka's important role in trade with the Roman Empire.<sup>466</sup> The chronology of this trade (based on coin finds) has been suggested to reflect a movement in the fourth century away from the east Indian ports mentioned in the *Periplus of the Erythrean Sea* and towards ports in Sri Lanka which more easily allowed the trade of goods from both coasts of India.<sup>467</sup> The coins, it has further been speculated, may have been used on the island for transacting business in the absence of a locally produced coinage.<sup>468</sup> There are, however, a number of problems with this narrative, of a methodological, historical and evidentiary nature. Responding to these problems, Reinhold Walburg has instead argued that the coins on Sri Lanka have no connection to direct trade with the Roman Empire but rather reflect only contact with India, already known to have been occurring.<sup>469</sup> The present author's own research, including analysis of the publications of two sites of significance for this question, the supposed 'ancient port' at Mantai, and the preliminary findings from the Godavaya shipwreck, supports the contention that the currently available evidence cannot sustain a theory of anything but negligible Roman contact with the island.<sup>470</sup>

---

<sup>466</sup> For reference to coins arguing for Lanka's trade role see, for example, Francis (2013b) 53-60; Miller (1969) 258-9; Weerakkody (1997) 161; Young (2001) 87; Pliny on the island, *Natural History* 6.24.84-5.

<sup>467</sup> Kiribamune (2013) 44-5.

<sup>468</sup> Walburg (2008) 312-14.

<sup>469</sup> Walburg (2008) 343.

<sup>470</sup> The recent publication of the site of Mantai, often considered to be the port of the ancient Sri Lankan capital of Anuradhapura, the excavations of which were halted in 1984 by the outbreak of the Sri Lankan civil war, have finally provided solid archaeological data with which to interrogate statements about the site's enormous significance in the ancient period, especially as an entrepot for Roman goods and traders (Graham (2013b) 98-104; Carswell, Deraniyagala and Graham (2013) ceramics: 189-269, artefacts: 271-507). Its maritime trade with the west was, when the catalogues were published, evidenced by two beads of probably Roman origin and two Roman coins (for the possible origins of which, further discussion below) (Francis (2013a) 352-3; Walburg and Graham (2013) 1-3). The Godavaya wreck, too, was discussed when it was first discovered, as a missing cipher to Indo-Roman trade, a position which seems increasingly untenable as the discovery of more material from the wreck fails to result in anything demonstrably Roman or Mediterranean (Trethewey (2012) 29).

Reinhold Walburg's publications also provide the only reliable source from which to assess the numismatic evidence and try to work out its relationship to this paucity of archaeological evidence.<sup>471</sup> The result of Walburg's research suggests a total figure of Roman coins on the island and their imitations of around 35,000-40,000.<sup>472</sup> This is an extrapolation from the c. 5000 the author has personally examined, combined with published accounts of now lost specimens, where the documentary record supports their veracity, and an estimate of the number of additional finds, extrapolating from this, which may reside in private collections. Furthermore, around 5000 are imitations based on the design of Roman copper coins, but manufactured on Lanka, probably over a short time period, and deposited usually separately from original coins.<sup>473</sup>

The deposition of these coins, the production and use of imitations, supporting archaeological data (or lack thereof) and comparison of their types with those found in south India all suggest several conclusions. First, the prototypes, which reached Lanka in large but not staggering numbers probably came from south India.<sup>474</sup> This does not rule out the possibility of some direct contact with the Red Sea but the coins do not constitute evidence for this. Second, finds of these coins predominate in the south of the island.<sup>475</sup> This poses interesting questions since in the ancient period the capital of the island was located in the north at Anuradhapura, though some textual evidence has suggested that the south may have been a relatively autonomous zone, at least for some economic

---

<sup>471</sup> His work, though not exhaustive, is extensive and is at least securely documented in the form of coins for which the author provides figures (rather than invocations such as 'thousands'), where possible, weights, images and detailed descriptions, and in the case of lost or uncertain material, a full trail of published references (Walburg (2008; 2006; 1998a, 1993; 1985)).

<sup>472</sup> Walburg (2008) 52-5.

<sup>473</sup> Walburg (2008) 343.

<sup>474</sup> Walburg (2008) 343.

<sup>475</sup> Walburg (2008) 54-5.

purposes.<sup>476</sup> Third, the arrival point of these coins remains unknown. Fourth, their use on the island does not seem to have been as monetary instruments. Their deposition is often as hoards, and only rarely as scattered single finds as might be expected from accidental loss during transactions. Many of these depositions are in the vicinity of sites of religious significance.<sup>477</sup> The imitations show the same kind of deposition pattern, in hoards, usually without or with only a few finds of original coins included with them.<sup>478</sup> This suggested to Walburg, and is accepted as likely here, that the imitations were struck as original coins became unavailable (probably as a result of having been hoarded) to fulfill the needs of a specific ritual exercise of deposition. Walburg has speculated that this ‘special purpose’ monetary usage may have extended to certain types of transaction among elites, based on the predominance of single finds, especially at the site of Tissamaharama in houses with wealthy assemblages of domestic goods.<sup>479</sup> This seems entirely plausible without altering the underlying conclusion that these coins (Roman or imitation) should not be regarded as a currency circulating within a monetized economy.<sup>480</sup>

Walburg’s study of the chronology of Roman coins and their imitations in Sri Lanka is perhaps the most radically different conclusion from that drawn by other scholars. He argues that original Roman coins may have reached the island in a single shipment or, perhaps, a few cargoes in around 425-450. The imitations he then suggests, based on close numismatic analysis and the examination of archaeological remains of moulds for making

---

<sup>476</sup> *Christian Topography* Book XI.17-20.

<sup>477</sup> Walburg (2008) 312-14.

<sup>478</sup> Walburg (2008) 350-7.

<sup>479</sup> Walburg (2008) 312-14.

<sup>480</sup> The physical appearance of the imitations also mitigates against such a conclusion. They are very small (often weighing less than 1 g.), and a very high lead content (up to 30 %) means that they are extremely brittle and friable. The designs struck onto them are, in consequence, often very shallowly made to prevent the coin breaking during manufacture and they would not have been sturdy enough to withstand long periods of exchange or rattling around in a purse (Walburg (1998b) 59).

the blanks of these coins found at Tissamaharama, were produced over a short time in the mid-fifth century.<sup>481</sup> The Roman coins were, he argues, deposited first, the imitations were made and deposited to continue this custom until it lapsed as a social practice.<sup>482</sup> There are elements of this theory which could be challenged. The precise dating of the creation of imitations to such a tight window, for example, is difficult to demonstrate conclusively, but the general contour of his conclusions is underpinned by the most detailed work yet undertaken on this material. In particular, his demonstration of the overlap between the types of copper coins found in south India and those in Lanka makes it entirely possible in the absence of any other major Roman finds on Lanka that they reflect contact only with south India.<sup>483</sup>

Indeed, assessment of the published numismatic evidence and wider archaeological and literary context for Roman trade with ancient Lanka has led this author to conclude that, while much remains unclear about ancient Lanka's trading relations beyond its borders, up to at least the seventh century the only overseas partner with whom the island can be shown to have been in regular contact was India.<sup>484</sup> The only plausible contender for a second trading partner (if one existed) is the Sasanian Empire. Small quantities, but greater than those of Roman pottery, of western Asian ceramics have been identified at Mantai and possibly Anuradhapura, where the largest quantity of ancient foreign ceramic finds consisted of storage vessels lined with bitumen, which are likely to be of the same

---

<sup>481</sup> Walburg (2008) 343.

<sup>482</sup> Walburg (2008) 312-14.

<sup>483</sup> Carswell and Prickett (1984) 11-37; Chanmugam and Jayawardene (1954), 65-6; Silva and Bouzek (1985).

<sup>484</sup> Darley (forthcoming) conclusion. Efforts to present the island in antiquity as a great entrepot of trans-regional commerce are primarily the product of a historiographical drive, which is especially noticeable in the context of modern Lankan nationalism in the 1980s and subsequently (For example, Bopearachchi (1997) xxi; Lokubandara (2003) 14).

type as sherds identified as being of Mesopotamian origin from south India sites.<sup>485</sup> The excavations at Mantai also revealed a fired clay sealing with three impressions of Sasanian origin.<sup>486</sup> Finally, the surviving Roman sources dealing with Indian Ocean trade also suggest that it was Sasanian Persia, rather than the Roman Empire which had the largest share of this trade.<sup>487</sup>

## 5.5 Coins as social history

### 5.5a Piercings, jewellery and bracteates

Piercings for suspension are a common feature of late Roman coins found in India. Of the 62 coins in the catalogue appended to this thesis, 37 have double piercings and 15 out of 21 late Roman coins in the Mangalore Hoard (see below) are also pierced. It is a phenomenon, however, which only affects gold coins. Of all of the copper coins published or examined for this thesis only one example exhibited holes which may have been intentionally made for suspension and none show the distinctive double-piercing considered characteristic for sub-continental coin finds.

---

<sup>485</sup> Graham (2013c) 206-8; Tomber (2009b) 39; Coningham (2006) 107-11. Even these finds could have moved from India. Strong evidence testifies to the movement of goods between India and Sri Lanka in the fourth to seventh centuries, which is supported by regular finds of Indian ceramics on the island. The ceramic finds suggest continuous contact between Sri Lanka and various areas of the Indian subcontinent in the first millennium A.D. and slightly earlier, though it is not currently possible on the basis of such finds to establish the volume of this contact, or the means by which it was conducted (Mohanty (2013)). The shipwreck discovered off the coast of Sri Lanka near Godavaya in 2003, which has been Carbon-14 dated to the first or second century A.D. and which has yielded finds of Indian ceramics and glass ingots, possibly for use in bead making, provides concrete evidence for the inevitability that contact must have been mediated by ship but it is as yet unclear (and may remain so) which way the ship was travelling when it sank, where precisely it was headed (no ancient port sites in Sri Lanka have yet been excavated) or who may have crewed it (Carlson (2010); Threthewey (2012); Muthucumarana (2011)).

<sup>486</sup> Graham (2013a) 411-12.

<sup>487</sup> Chapters three and six.





**Fig. 5.9:** Unpublished copper coin from the R. Krishnamurthy collection showing a possible piercing.

The Mangalore hoard, which came to light shortly before its 1998 publication and was sold by a dealer in Mangalore to Prof. Wolfgang Hahn of the Institute for Numismatics and Monetary History in Vienna is remarkable as the best documented and largest example of a hoard of late Roman and Aksumite coins apparently discovered together and clearly subject to the same patterns of ancient use.<sup>488</sup> The provenance of the hoard, owing to its circumstances of purchase, is rather unclear but it is most likely to have originated somewhere in southwestern India and probably in the state of Karnataka. It consists of twenty-one late Roman and twenty-three Aksumite coins and the dates of these coins have been fully examined by Hahn. They suggest that the hoard was deposited sometime after the early sixth century – the latest coin in the hoard is an Indian imitation of a *solidus* of Anastasius I.<sup>489</sup> It is one of very few examples of Aksumite coins being integrated economically with Roman coins and even in this case the precise economic function of the coins and the reasons for their composition into a hoard remains mysterious. Certainly the dates of the coins included in the hoard suggest that it was gathered over some time and the hoard was subject to some use which is difficult to characterize as purely economic, since thirty-six of the coins (fifteen Roman and twenty-

<sup>488</sup> Nawartmal and Nawartmal (Hahn) (1998).

<sup>489</sup> Nawartmal and Nawartmal (Hahn) (1998) 52.

one Aksumite) have been pierced with the double piercings considered characteristic of coins found in India.



**Fig. 5.10:** *Image Number 38 from Hahn's (Nawartmal) publication of the Mangalore hoard, showing double piercings keeping the royal busts upright.*

The piercing of Roman coins in India is one of the most striking features of these series. It is also a feature more commonly applied to late Roman than earlier coins. The piercing of coins in India is not unique to the first centuries A.D., though this is the first period in which it is widely observable, and the double piercings which are much commoner on examples from the third century or later appear to have begun in this period.<sup>490</sup> Subsequently coins and their imitations from every period have been pierced for suspension or to be stitched onto clothing. It is a tradition which continues to the present. It is impossible to state with certainty how such piercings were used in ancient India but temple statues clearly show necklaces or belts with round objects hanging from them so it

---

<sup>490</sup> Berghaus (1992a) 16.

can be assumed with some certainty that they were worn for display. It is possible that double piercings were also used to stitch coins onto fabric.



**Fig. 5.11:** *Temple statue from the Meenakshi Temple (Madurai) showing a male deity wearing anklets and belt decorated with round hanging objects.*

Such use of coins is not unique to India: coins in jewellery are common to many cultures and Roman coins were frequently incorporated into display both within and outside the Empire.



**Fig. 5.12:** *This semmissis of Zeno looped for suspension originates from Syria but while the frame and loop display more care than any example of a late Roman coin from India showing signs of display modification no effort has been made to ensure that the imperial portrait hangs upright.<sup>491</sup>*

Two features are unique to the subcontinent, however: one is the regular use of the double piercings, side by side, which are diagnostically Indian. The consistency with which piercings are applied from obverse to reverse in order to display the imperial portrait upright is also not matched by pierced or suspended coins from anywhere else in or around the Byzantine Empire. The care with which piercings were applied to emphasise this feature makes it clear that it was an aesthetic valued by artisans in India.

---

<sup>491</sup> Photography © R. R. Darley 2011, courtesy of Wolfgang Hahn from his private collection.



**Fig. 5.13:** *Imitation solidus of Zeno with Indian double piercings. These piercings follow the typical (but not universal) pattern of being pierced from obverse to reverse and the universal pattern of placing those holes above the portrait on the obverse (no. 30).*

Despite their importance piercings can be difficult to determine from publication. Sometimes, they are apparent in images and some authors mention them. It is, however, an interesting oversight in Nagaraja Rao's publication of the Akki Alur hoard that the images show a large number of pierced coins, yet these are not mentioned in the notes on the individual coin finds. In consequence, the absence of references to piercings, where there are no images to consult, cannot be considered an absence of piercings in any writer's work.

The piercing of coins in the Mangalore Hoard may lend some support to the contention that Aksumite coins did, in some capacity, circulate alongside Roman coins in the Indian Ocean trade though this should not be overstated on the basis of a single hoard. It is more suggestive of south Indian prerogatives, however, that on the Aksumite coins it is likewise the royal bust which is emphasised by the piercings, suggesting that this image was invested with significance beyond the value of the coin, or the identity of the portrayed. Aksumite coins did not weigh the same as late Roman *solidi* (already discussed

in chapter four) and the care with which the portrait is displayed is not matched by the suspension or setting of Roman coinage in jewellery anywhere else, including within the Roman Empire.<sup>492</sup> In seeking to understand the role and value of late Roman coins in south India, piercings provide a vital clue to the possibility that precious metal, coined to have a specific appearance including a human portrait, constituted a product desired in local markets. The care with which they were applied to coins undermines the hypothesis that coins circulated purely as bullion. Nevertheless, their gold value (indicated by the production of pierced imitations and bracteates of clearly lower gold content but still with a gold appearance) was an element of their appeal, underlining the often fluid boundaries between economic and ritual value in local economies.

Decorative objects made to look like Roman and Byzantine coins present a valuable case study for considering some of the limitations outlined above and these themes will recur elsewhere in this chapter. Clay *bullae* imitating silver *denarii* of the first two centuries AD are a particularly striking example of objects produced entirely to give the appearance of Roman coins with no bullion or monetary value. Discovered at sites mainly in Karnataka and Andhra Pradesh and further north, they appear to imitate Augustan and Tiberian *denarii* and usually have a looped section at the top built in for suspension.<sup>493</sup>

For the later period, bracteates are a more common expression of the same impulse. These usually uniface coin-like objects are commonly much lighter than the coins they imitate, sometimes made in a very impure gold alloy, and would never have been mistaken

---

<sup>492</sup> Hahn (2000).

<sup>493</sup> Deo (1991) 39-45, 40.



for genuine or high-quality imitation objects. Their purpose, like the clay *bullae*, was to give the impression of Roman coins, suggesting that such coins carried sufficient associations of wealth or symbolic value for people of varied means to seek similar objects made from lower value materials. The fact that the clay *bullae* often have a loop for suspension built in and that many bracteates are pierced further supports the hypothesis that they were created for display.



**Fig. 5.14:** *Uniface bracteate inspired by Late Antique coins design (probably solidi of Justin I-Justin II), but effectively impossible to date by any intrinsic criteria.*



**Fig. 5.15:** *As in Fig. 5.14 this uniface bracteate derives from late antique prototypes but is otherwise undatable to any specific period. It has been pierced twice for suspension and even though the bust is crude almost to the point of being unrecognizable the piercings still enable it to hang upright and have clearly been made from obverse to reverse.*

In this respect the hoards in which Roman coins have been discovered with jewellery in south India provide hints at the value of these coins and their ongoing decorative use, but also highlight the problem of trying to interpret numismatic evidence in the context of other categories of artefact which are poorly understood or entirely lost.

Of the four hoards Turner identified as including jewellery, the Manikyala hoard is something of an exception, since it consisted of five *aurei* set into a piece of modern jewellery.<sup>494</sup> The other three hoards suggest a number of themes. Two (Koneripatty and Weepangandla) included both silver and gold items. Precious metals were, therefore, hoarded as a store of value but not necessarily separated out by metal type. For gauging the date of deposition of pure coin hoards in south India this is somewhat suggestive. Most of the large hoards of *denarii* discovered in south India contained only *denarii* and not later *aurei* or *solidi*. This may indicate that at least the earlier (by date of production) *denarii* reached India and were hoarded before the later *aurei* began to arrive in the subcontinent. The other theme which emerges is a lack of information (or demonstrable interest in) the accompanying jewellery finds. The Koneripatty hoard apparently contained thirty-five *denarii* alongside two objects of gold jewellery, recorded in the *Indian Express*. The jewellery was described as being of ‘Sangam Age’.<sup>495</sup> The difficulties of dating the actual *Cankam* writings from which such an ‘age’ is supposedly dated are discussed in chapter seven. The use of the term ‘*Cankam* Age’ in more popular contexts, however, is yet more ambiguous. Generally it may be applied to any antiquity thought (for reasons of highly variable reliability) to date from the last few centuries B.C. to the first few centuries A.D.

---

<sup>494</sup> In this respect it suggests a continuity of practice which is also visible in modern Indian uses of gold, which include the manufacture of coin-like objects for display and storage of wealth contributes nothing to an understanding of earlier responses to these coins (Bundhun (2012)).

<sup>495</sup> *Indian Express*, Madurai edition, 19/04/1987, cited from Turner (1989) 61.



No further information about this hoard seems to survive. Some Tiberian *aurei* were also apparently discovered in Vellalur in 1939 with some jewellery. Turner records the speculation that this may have been western jewellery (thereby holding out the prospect of comparison with ancient and modern exemplars in order to date the hoard). If ancient, this would also be the most important find of western metalwork, apart from coins, in south India. No trace of the jewellery, however, remains.

Finally, the Weepangandla hoard, discussed above, had the potential to be the most important find of early south Indian jewellery ever discovered with around nine gold jewellery items, including rings, necklaces and wrist adornments, none of which were, unfortunately, preserved.<sup>496</sup> Coin hoards including jewellery are therefore limited by an inadequate history of publication and insufficient contextual study of ancient jewellery, but they are suggestive of the incorporation of coins into an economy based around the value of precious-metal objects, which went beyond simple bullion worth (no mention occurs in these sources of the jewellery having been hacked or cut as in a bullion economy like that of Viking-age northern Europe) and entailed elements of display.<sup>497</sup> The distribution of coins finds in the landscape, thus, probably reveals far more about the relative strength and dynamic of late antique market forces in India than about trade with the Mediterranean.

### **5.5b Imitations**

The imitation of precious metal coins, apparently in the subcontinent, since similar imitations are not found elsewhere in the Roman or Indian Ocean world is a further

---

<sup>496</sup> Gupta (1972) 1-2.

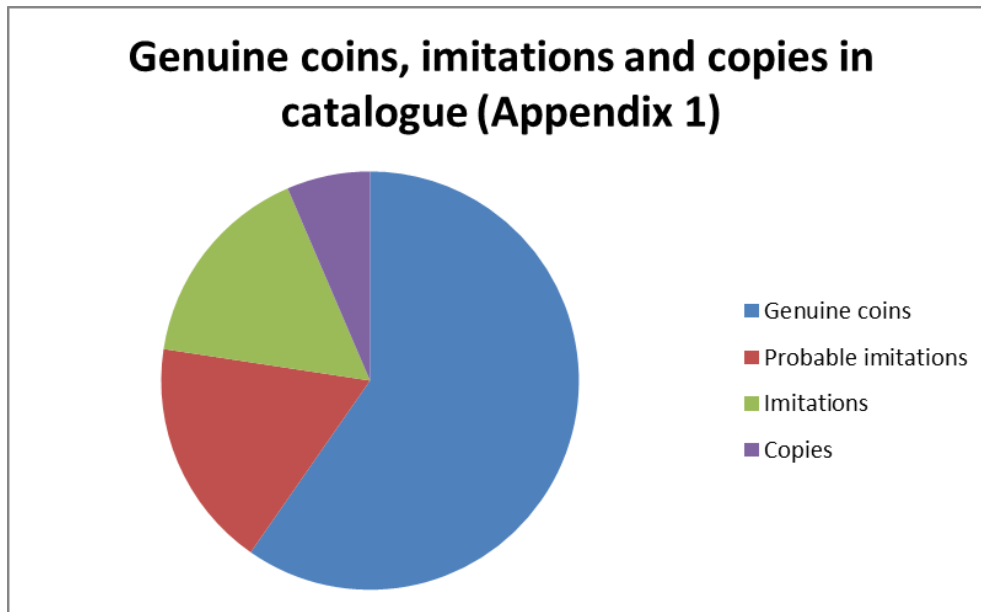
<sup>497</sup> Sheehan (1995).

indication of sub-continental patterns of use. As in the case of scratch marks imitations are not recognised in descriptive literature. Identifying imitations, many of which are extremely good, can be difficult. Furthermore, many publications have been undertaken by numismatists not primarily specialised in late Roman coinage. Consequently, only the Madras Government Museum collection and the Akki Alur hoard are used.<sup>498</sup> Based on a survey of literature it seems that imitations were more common in the late Roman phase of Mediterranean contact with south India than in the earlier centuries, perhaps in response to the reduced number of coins moving from the Mediterranean.<sup>499</sup>

---

<sup>498</sup> This analysis addresses only the late Roman coins since it relies on the author's own experience, however my experience of some of the early Roman coins in the Andhra Pradesh State Archaeological Museum and in the Madras Government Museum suggests that locally imitated *aurei* were certainly a part of the first to third century experience of Roman coins in India, alongside the clay *bullae* already mentioned.

<sup>499</sup> Berghaus (1993b).



**Fig. 5.16:** *The proportion of imitated and copied coins in the catalogue of coins (Appendix 1) demonstrates the high number of non-genuine coins produced in the sub-continent and the extent to which very high quality imitations fulfilled this market need (see Fig. 5.19 for the distinction used in this thesis between copies and imitations). The extent of probable imitations is likely to be an overestimate, while the number of imitations is likely to be an underestimate since imitations in the Akki Alur hoard could only be examined from photographs, making identification based on characteristics such as wear and finish harder to establish. The rule here has been to err on the side of caution in determining coins to be imitations. Total figures: genuine coins = 37, probable imitations = 11, imitations = 10, copies = 4 (total 62).*

Imitations vary greatly in quality and may have served a variety of purposes in local economies. The quality of some imitations of late Roman coins in India makes it impossible to differentiate them from genuine coins.<sup>500</sup>

<sup>500</sup> Berghaus (1993a) discusses Indian imitations of Roman coins in India and Berghaus (1991) 117 alludes further to the difficulty of identifying some imitations as such.



**Fig. 5.17:** *This late Roman solidus may be genuine or an imitation but if it is the latter then the attention to detail on the part of the sub-continental die engraver is extremely fine (no. 30).*

Others are crude and bear only a passing resemblance to Roman coins, showing an imperial bust and perhaps some indistinct marks in place of a legend.



**Fig. 5.18:** *An example of a crude (though two-sided) imitation of a late Roman solidus weighing only 0.7 g. (no. 58).*

Their weight ranges from that of genuine Roman *solidi* to less than a gramme. The existence of imitations and the range in their quality suggests the cultural value of Roman

coins in India, as does the evidence of a die for forging first-century Roman coins discovered in Banavasi.<sup>501</sup> It is useful when referring to coins found in India to divide types of imitation into three categories:

<b>Genuine Coins</b>	<b>Coins issued and produced with the approval of the Roman or Byzantine state in royal mints.</b>
Imitations	Coins produced without the knowledge of the Roman or Byzantine state, but with an effort made to pass as genuine.
Copies	Coins or bracteates inspired by the design of Roman or Byzantine coins but not designed to pass as currency (usually due to weight discrepancy or lack of inscription)

**Fig. 5.19:** *Table of distinction between different levels of coin imitation.*

That increased numbers of late Roman imitations may have been a response to declining importation of original coinage should not be assumed (as has been the case) to suggest a purely economic function for the coins.<sup>502</sup> This section uses the examples in the Madras Government Museum alongside examples from other collections to explore what imitations can reveal about the economic and symbolic range of uses to which late Roman coins were put in south India. Imitations also shed some light upon the extremely murky process of Byzantine coin manufacture.

<sup>501</sup> Narasimha Murthy (1984).

<sup>502</sup> Turner (1989) 37.

The details common to all imitations reveal the features most valued by consumers of Roman coinage in India. Above all, the imperial portrait seems to have been the feature which attracted attention, was chosen for display and featured on any attempt to copy coins. Second to this appears to have been the mint mark, CONOB, which is almost always applied to all but the crudest imitations. The legend, by contrast, is frequently blundered or replaced with meaningless symbols.<sup>503</sup>



**Fig. 5.20:** *Imitation solidus with a blundered obverse and reverse legend (no. 10).*

Different imitations in India suggest a range of functions including the overvalued use of coins as a guaranteed unit of bullion and the purely decorative and probably status-oriented use of coins resembling Roman or late Roman prototypes.

The incidence of die wear on imitations of late Roman coins in India is further suggestive of differences of manufacturing technique between genuine and imitation late Roman coins.

---

<sup>503</sup> It has been suggested that in some cases this may have been because the engravers were literate but only in Brahmi, lending further support to the contention that such imitations were an entirely Indian phenomenon (MacDowall and Jha (1992a)).



**Fig. 5.21:** *Imitation solidus showing radial die wear patterns on obverse and reverse and a die crack on the obverse portrait (no. 55).*

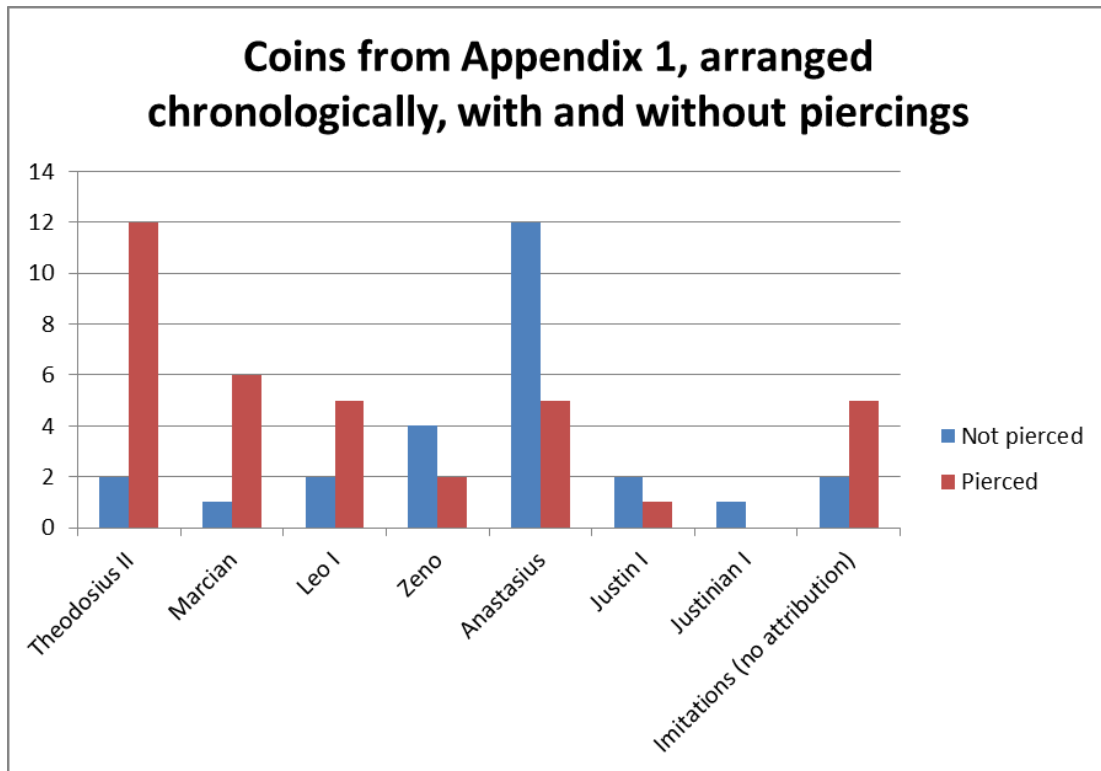
The radial marks clearly visible on this coin, and the deep die crack demonstrate either a weak die or a die that was used for too long. This may reflect the effort required to cut dies for imitating Roman coins, thereby leading imitators to get as much use out of the dies as possible. By contrast, the lack of such marks on genuine late Roman coins strongly suggests quality control mechanisms at state mints which circulated worn dies out of use and removed cracked dies from circulation, providing an important insight into the obscure world of early Byzantine mint regulation.

### ***5.5c Chronological change and continuity in use***

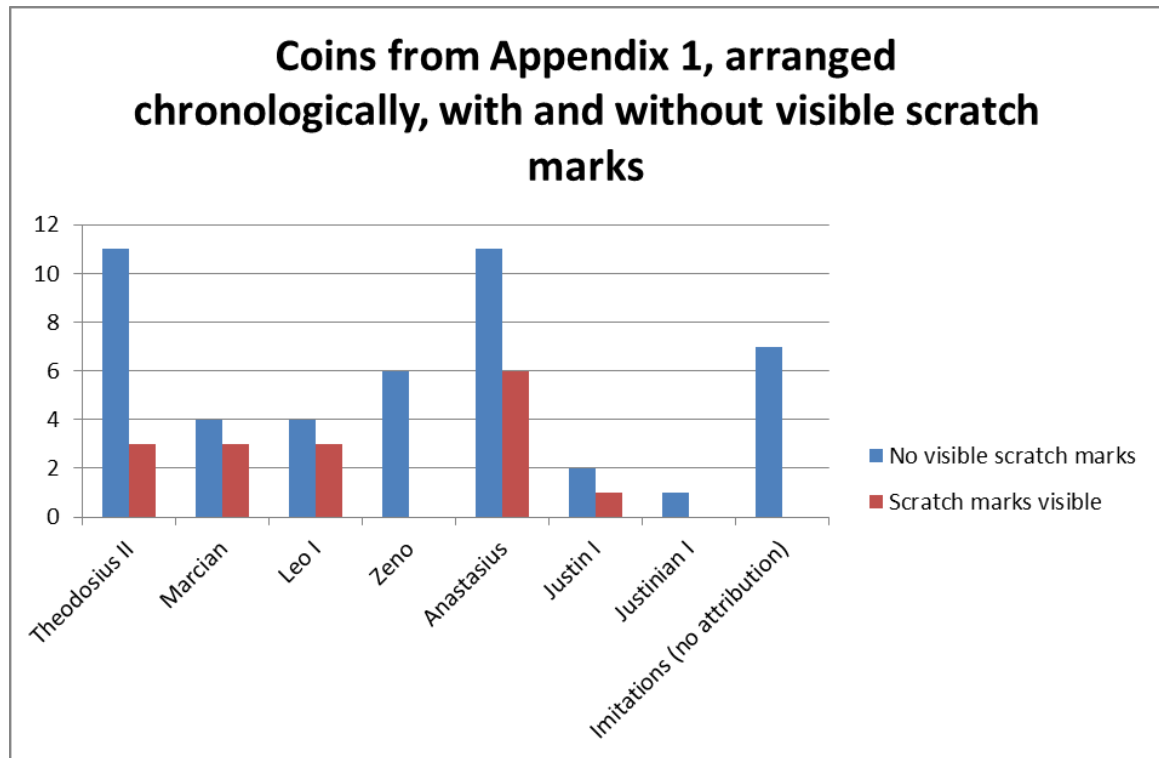
Arraying signs of social use chronologically is also suggestive of the function of these coins in south India. If the attributed reigns of coins are tabulated alongside data for scratches and piercings, the results demonstrate the increased likelihood of earlier coins carrying such marks. This suggests either that coins were modified (pierced or scratched) immediately upon arrival and that this practice diminished in frequency over time or that

the longer coins were in circulation in the subcontinent the more likely they were to acquire such modifications. If the former theory were hypothesised, however, it would be more likely to find all (or at least the very clear majority) of coins of an early date modified. Hoards like Akki Alur containing coins of varying ages, however, support the conclusion that early examples circulated alongside more recent imports to the subcontinent, perhaps for centuries, before being deposited, and that scratches were added to coins of all ages gradually. There is no discernible difference between the types of scratch marks which appear on earlier or later coins. This contrasts, furthermore, with the double piercings, which occur much more frequently on late Roman than earlier Roman types. As in the case of one of the *aurei* in the Akki Alur hoard, earlier Roman coins were sometimes provided with a gold frame and suspension loop, which is unattested on late Roman types. The sample numbers establishing these correlations are very small but support the conclusion that coins were probably not marked in any way systematically on arrival in India.





**Fig. 5.22:** Using the data from Appendix 1 (total 62 coins, of which 37 are pierced), this survey of piercings and attributed emperors in chronological order suggests that if coins reached south India roughly in order of minting, they were more likely to acquire piercings the longer they circulated in the sub-continent, reinforcing the contention that such coins were valued objects with significance and mobility in south Indian economic spheres. Imitations for which a prototype can be identified have been counted as part of the total for that emperor.



**Fig. 5.23:** Using the same method applied to generate Fig. 5.22 this diagram shows the comparable likelihood that coins would acquire scratch marks the longer they circulated in south India, once again suggesting that these were objects which enjoyed prestige and significance beyond their use as bullion in exchange for Indian goods. The correlation with scratch marks is necessarily lower because fewer coins in total bear this modification but later coins remain proportionally less likely to carry scratch marks, probably because they were in circulation for a shorter period before being deposited or secured somewhere.

Though modifications are visible, it is also notable that most coins are discovered in extremely good condition, suggesting that their use, though perhaps of long duration, was careful. Precious metal coins were items of value and prestige.

### 5.5d Scratches and slash marks

Slash marks applied to coins, usually over the imperial bust and most often with a chisel are a common feature of early Roman *denarii* and *aurei*. Such marks are very rare

on fourth- to seventh-century examples, but Fig. 5.24 illustrates the only documented example of a fully cut Roman or late Roman coin found in India; its implications have direct relevance for the wider discussion of slash marks. This coin was cut carefully, apparently with a chisel, into fractions, most likely after it had been pierced for suspension.



**Fig. 5.24:** *Coin cut into three pieces, all discovered together, and with double piercings (no. 14).*

The careful cutting of the coins may suggest a bullion use for Roman coins but it should also be noted that the fractions have in this case been kept together so the coin cannot be used as evidence for the coins operating in a purely bullion capacity in local economies, being cut to enable lower value transactions. This is highly relevant to the wider discussion of slash marks, which have been used with little justification to make quite broad statements about the monetarised or bullion-driven economies of south India.<sup>504</sup> Slash

---

<sup>504</sup> Shastri (1992) 129 argues that the slashed coins filled a gap in the local economy of south India by providing a good quality precious metal coinage, with the bust slashed to prevent a perceived challenge to local authorities. Suresh (2011) 23 argues that the marks removed the denominational value of coins and validated them in the local economy (a difficult contention to support since gold coins did not carry a denominational mark for a slash to obliterate). Deo (1991) 40 argues that the slash marks debarred the coins from being used as Roman currency (without specifying by whom, who might have had familiarity with Roman currency) and enabled them to circulate as bullion.

marks on coins are most often cited as having demonetized coins in order that they might circulate outside the Roman Empire without challenging the local authority of rulers.



**Fig. 5.25:** Roman aureus exhibiting a distinctive slash mark to the imperial bust and double piercing.

Chronological analysis of slashed coins by Turner has indicated that the slashing of Roman coins may have had some connection with the second-century coin reform of Nero, with its alteration of the weight of the gold *aureus*, lending some support to the idea that the mark was applied perhaps to mark lighter from heavier coins, though this is not an absolute rule in the application of slashes.<sup>505</sup> The nature of this connection remains speculative, however, and the insistence that they must have had significance for monetisation remains both unverifiable and, given that south India was non-monetised and did not have a history of monetary use, implausible.<sup>506</sup> It is also unclear why Turner, who examined the Madras Government Museum collection, did not discuss the coin pictured below (Fig. 5.26). This is a uniface bracteate of unattributable prototype but probably of

<sup>505</sup> Turner (1989) 30-34.

<sup>506</sup> Tomber (2009) 36-7 adheres to the theory that defacement of the portrait was intended to de-monetise the coins to prevent their re-circulation into the Roman economy. Turner (1989) 33 suggests that only one ship-load of *aurei* was slashed, then subsequently circulated in India.

the early rather than late Roman phase of trade since its weight most closely matches the earlier 7 g. *aureus* and the bust is profile rather than three-quarter. It is certainly impossible that it could ever have been mistaken for a genuine Roman coin but the double piercings applied to it strongly suggest that it was at some point used as a decorative object. Piercings are discussed below but seem to have been predominantly a feature of late Roman coin finds in India, while slash marks mainly adorn earlier Roman coins, thus it is possible that the coin was pierced for suspension by the time the three deep slash marks had been applied. As in the case of slash marks on genuine Roman coins or very accurate imitations, the slash marks on this bracteate appear to have been made with a chisel. They are deep, in one case sufficiently deep as to cut right through the coin, and they are across the portrait. They are far deeper than could have been required to test the metal purity and the weight of the coin. Their purpose therefore remains enigmatic, but it would appear that their prevalence in the early phase of trade suggests, if not a common authority slashing coins, then at least a commonly understood meaning which extended beyond coins thought to have a genuine Roman provenance.



**Fig. 5.26:** Copy inspired by late antique coin design, featuring deep slash marks, chiselled across the 'imperial' portrait (no. 56).

The distinction between single and hoard finds is of great importance in understanding the significance of late Roman coins in south India. Hoards, defined as two or more coins found together, are almost always intentional deposits. They may be stores of wealth buried for safekeeping in times of unrest, savings buried for security then unexpectedly forgotten about or overlooked, leading to them never being collected, or they may be deposited in symbolic locations, for example, under buildings or outside houses for ceremonial reasons.<sup>507</sup> In any of these circumstances, however, hoards represent wealth collected for a purpose, with various implications for the examination of hoarded coins as evidence for economic processes. Chronological distribution in hoards is particularly significant: it is possible that on occasion a wealthy person may have hoarded a large supply of coins taken out of immediate circulation, but more often hoards display evidence of having been collected over some time. They may represent a treasury or family savings and as such might include coins spanning many years, even centuries.<sup>508</sup> This phenomenon is clearly demonstrated in the largest hoard of Byzantine coins ever discovered in south India, the Akki Alur hoard from Karnataka. This includes forty-three late Roman gold *solidi* alongside three Severan *aurei* which also exhibit much heavier patterns of wear than the later coins suggesting a longer period of circulation prior to deposition. The circumstances of the discovery, publication and limited accessibility of the Akki Alur hoard have been discussed elsewhere, but although much about this unique discovery remains obscure, the photographs available from the Berghaus collection permit close

---

<sup>507</sup> Grierson (1992) 118.

<sup>508</sup> Senior and MacDonald (1998) 21-3 – Indo-Greek coinage provides the best case-studies for hoard analysis, as it is one of the few periods of history for which large quantities of coins stand alone. In the absence of written material, studies of hoard composition have become an important tool in constructing chronology. Careful analysis of the methods employed also reveals some of the many pitfalls of attempting such a historical reconstruction on the basis of numismatics alone.

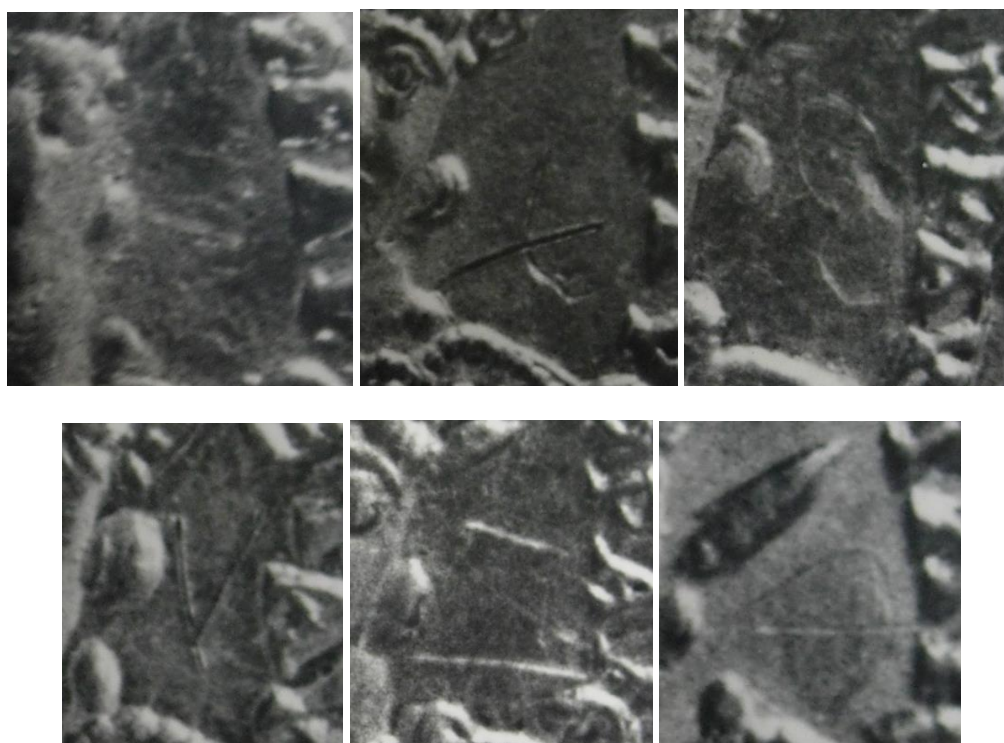
analysis of one phenomenon almost never alluded to in printed literature about late Roman coin finds: scratch marks intentionally applied to coins.<sup>509</sup>

Scratch marks on late Roman coins have received no attention in specialist literature yet appear in this author's experience on a significant number of coins personally examined or for which high-quality photographs are available. The black-and-white, high-resolution images of the Akki Alur hoard provide some of the best images of intentional scratch marks on coins. As the images below (Fig. 5.27) demonstrate, these scratches are usually complex, composite shapes, involving long lines, deep scoring of the coin surface and often two or more lines applied in specific spatial relationships, such as a cross shape. In some cases there is ambiguity when considering whether a scratch mark was intentional, especially on a coin with heavy accidental wear, however, the marks illustrated here and used to discuss the phenomenon of scratching on late Roman coins in India are all longer or deeper than is usual with accidental scratches. Multiple lines in different directions are a particularly strong indicator of intentional marking since accidental heavy scratching usually occurs in one direction. Six coins in the Akki Alur hoard display scratch marks judged to have been applied intentionally to the fields of the obverse and in some cases, the reverse, of the coins. These are clear in the photographs which are currently the only remaining source of data on the coins held in the Karnataka State Archaeology Department collection. Nevertheless, none of the first four publications of some or all of the hoard mentioned these scratch marks.

---

<sup>509</sup> Day (2012) 10.





**Fig. 5.27:** *Highlighted examples of scratch marks on coins in the Akki Alur hoard. All of these scratch marks occur on the obverse in the right field though scratch marks can less commonly be found in the left field and on the reverse of coins (nos 20, 23, 25, 27, 45, 46).*

One of the difficulties in dealing with these marks is the uncertainty about their purpose and meaning. Such marks are termed in numismatic literature schroff marks, but this is potentially misleading. Schroff marks refer to marks applied to coins (commonly Indian series of the Mughal period (sixteenth to nineteenth century)) as a means by which money-changers (Gujarati - *sharaf*) tested a coin's metal purity and noted their having done so.<sup>510</sup> Often they are simply short scratches around the edge of a coin, but can be applied anywhere on the face, and the term is often applied to more complex marks. Schroff marks must be distinguished from countermarks, which are stamped onto coins, usually by a recognized private or state authority to modify the coin's circulating validity

---

<sup>510</sup> Garg and Garg (forthcoming) chapter seven; Bose (2004).



in some way (for example, by allowing it to circulate beyond the limits of its original issuing authority). If this were the case, however, one might expect more complex marks (hence the use of stamps in other cultural contexts) since the act of scratching simple designs into the field of a coin would be easy to imitate and would therefore invalidate the advantage of marks made by a respected authority. Of these two economic alternatives, the former, comparable to the Mughal phenomenon of Schroff marks, seems most plausible due to the simplicity of replicating the designs.

The incidence of coin finds in contexts suggesting ritual use (either at religious sites or showing signs of contact with puja dust) raises the possibility that scratch marks had a votive function of some sort, though this is speculative. Phenomena such as the well-documented scratching of often crudely incised messages on pieces of metal left as votive offerings at Romano-British sites such as Bath, and the depositing of mutilated coins at such sites (often slashed or scratched) provides a partial parallel. In an Indian context offering coinage to temples has a long documented tradition, especially at the temple of Lord Venkatesa at Tirumala, Tamil Nadu.<sup>511</sup> Whatever their purpose, an examination of these marks demonstrates that certain complex shapes recur and may suggest some sort of recognized symbolic language.

The lack of attention to scratch marks on late Roman coins highlights features of the analysis of Indo-Roman trade which recur throughout this thesis. Because they have commonly been assumed (under the heading 'Schroff marks') to have a well-understood purpose, and one moreover which accords with the general ideological preference for

---

<sup>511</sup> Narasimha Murthy and Raja Reddy (2014).

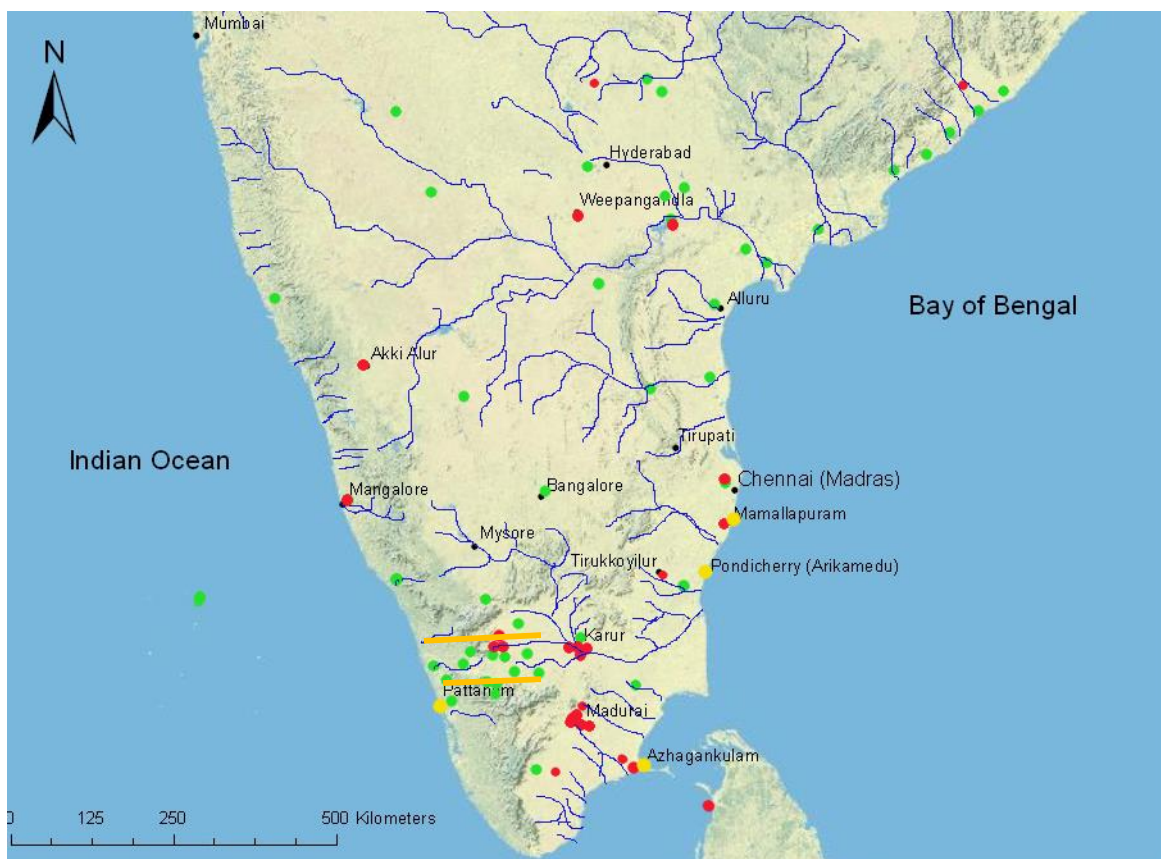
commercial explanations for evidence pertaining to Indo-Roman trade they have not been the subject of debate or investigation. The treatment of coins frequently as types within series also risks disregarding scratch marks which are sometimes difficult to see and clearly not part of the type or design of the coin under investigation. While the majority of scratch marks currently available for study occur in the Akki Alur hoard, they are visible on coins from the Madras Government Museum as well:



**Fig. 5.28:** *Apparently genuine solidus of Anastasius I with scratch marks in typical location in right field of obverse, with enlargement of scratch marks (no. 3).*

### 5.5e Distribution

Distribution of coins in India has most often been viewed as a component of the economic history of these objects. Historically, however, the movement of coins within the south Indian landscape may also play a part in their current locations of discovery. As Fig. 5.29 demonstrates, the concentration of coins around rivers and the land route across the sub-continent via the Palghat Pass through the Western Ghats may illustrate patterns of movement from the coast.



**Fig. 5.29:** Distribution map of Roman and late Roman coins with the Palghat Pass marked. Green = Roman coins, red = late Roman coins, yellow = 'Indo-Roman' trading ports.

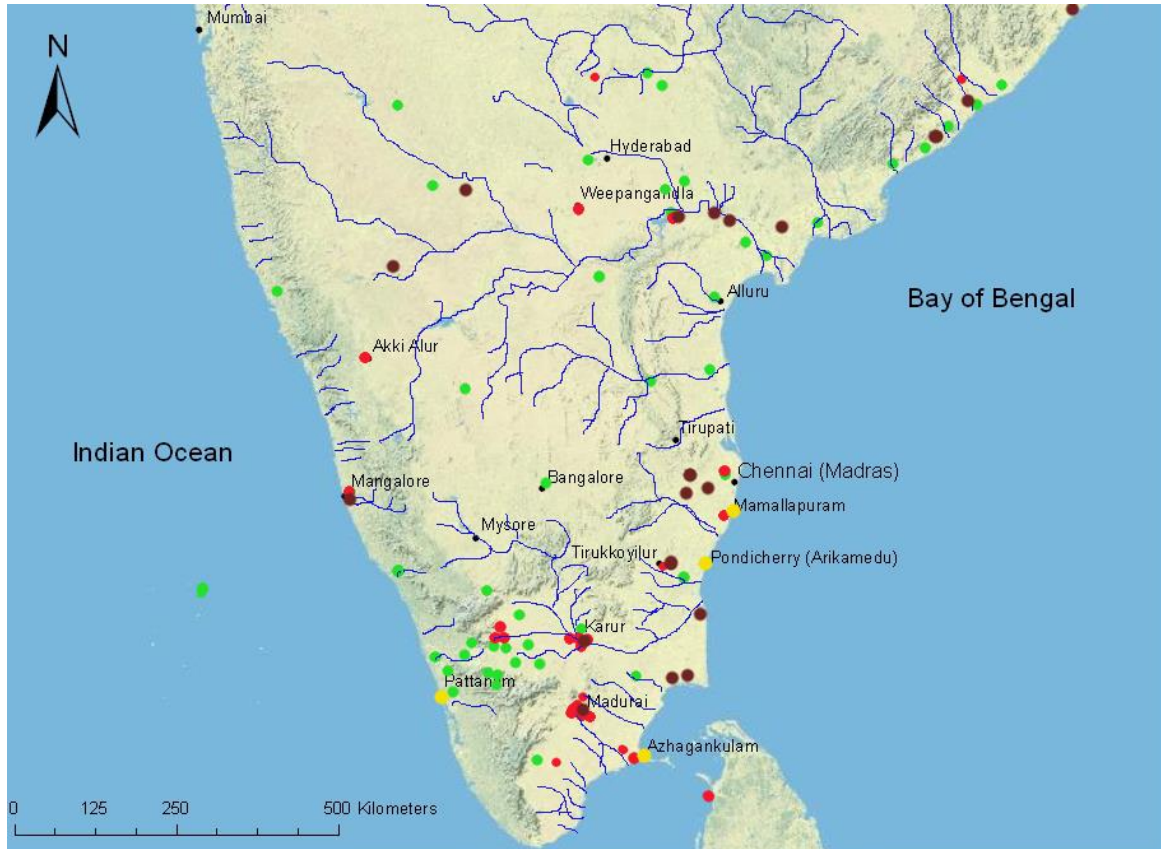
It seems clear from this analysis, as well as the frequent discovery of late Roman gold coins in hoards, sometimes accompanied by gold jewellery, that their movement within south Indian economic networks was substantial.<sup>512</sup> Coins found with jewellery, though, provide a particularly important opportunity to assess the possible value of coins in the economy in which they were hoarded: if coins circulated only as bullion then there would have been no reason not to melt them and turn them into jewellery, which can both be worn more securely and made to conform to local aesthetic and display preferences. Coins in a mixed hoard certainly could have been awaiting such treatment. Large numbers of coins hoarded alongside jewellery, or to an even greater extent, coins used as decorative elements in jewellery or hoarded alongside imitation coins may, however, suggest that the value of the metal was increased by it having been struck into coin sufficiently that it was considered socially or economically preferable to preserve them as coins.

The hypothesis that coin distribution is not merely indicative of economic factors is strengthened by the absence of coins finds from ports often referred to as 'Indo-Roman'. These are analysed in detail in chapter seven, but for the present argument it is sufficient to state that if coins are argued to be proxy indicators of the volume and geographical shape of Roman and late Roman trade with India then it is surprising that so few of them occur at sites which are argued in the literature to represent the primary points of contact between the Roman and Indian worlds. One further element of coin distribution suggests a further explanation for their location in the subcontinent. Mapping coins alongside religious sites

---

<sup>512</sup> Hoards of Roman and late Roman precious metal coins containing jewellery have included the Koneripatty hoard, Turner (1989) 61, the Manikyala hoard (found in territory belonging to modern Pakistan in 1886). Turner (1989) 66, the Vellalur hoard, Turner (1980) 84, and the Weepangandla hoard, Gupta (1972),

of the fourth to seventh centuries demonstrates a visible though not overwhelming correlation:



**Fig. 5.30:** Roman and late Roman coins in south India marked alongside major religious sites of the first eight centuries A.D. Green = Roman coins, green = late Roman coins, yellow = 'Indo-Roman' port sites, brown = religious sites.

Epigraphic evidence referring to donations to Buddhist sites in units which seem to refer to coins further strengthens this contention.<sup>513</sup>

<sup>513</sup> Ray (1996a) 355.

### *5.5f Puja dust*

One further feature observable in the Madras Government Museum collection implies a ritual value for these coins. On various Roman coins examined by the author a red residue was found in the design of the coin. How common this may be is impossible to speculate upon since it is never mentioned in published records of coins, but this cannot be assumed to be evidence of absence. This red residue has not been subjected to scientific analysis, but correlating its presence with observed practices in modern India suggests a possible source. The dust used in puja in India may be rubbed onto the foreheads of celebrants, and may also be applied to objects of significance. Such evidence cannot date the ceremonial use of late Roman coins in India – it could have been applied at any point as they circulated in the subcontinent – but it demonstrates the significance of coins in ritual contexts and lends slight but not insignificant support to the emerging impression of objects with importance beyond the economic in India.<sup>514</sup>

---

<sup>514</sup> Puja dust, used to mark the body and ritual objects in Hindu devotions, was traditionally made from cinnabar though synthetic powders are now often substituted. Dr Robert Bracey (British Museum) first raised the possibility that this could account for red residue on many coins found in India (personal communication June 2010).



**Fig. 5.31:** Red residue highlighted on this late antique solidus (no. 1).

## 5.6 Conclusion

The published and unpublished late Roman and Byzantine coins finds from India (which even if published have never been subject to a systematic study, but have only appeared as peripheral details in catalogues of Roman coins, or decontextualized notices of discovery) provide a new space for analysing Indo-Byzantine exchange, which moves beyond extrapolations from known, largely Roman evidence, or undue reliance on Book Eleven of *The Christian Topography*. Close analysis of the evidence for economic and social uses of these coins highlights the difficulty in using much of the numismatic evidence in India, including for the Roman period, to produce the kinds of distributional and other simple quantitative models, which are a common feature in Indo-Roman literature. Coins are uncommonly mobile yet static historical artefacts, which travel freely through space and (compared to many more fragile items) time. They may bear traces of their use but remain recognisable and in most cases identifiable. They thus offer a useful anchor for a wider exploration of the reception and interpretation of evidence for Indo-Byzantine exchange. Nevertheless, they are not sufficient to draw a new picture of such

trade, nor are they the only new sources which have recently enabled a re-evaluation of post-third-century Mediterranean contact with India. The final two substantive chapters will examine the predominantly archaeological evidence for Byzantine trade with India from the shores of the Red Sea and Persian Gulf, and the literary and archaeological evidence from south India in order to provide these coins with a richer historical context. Nevertheless, the same concerns about ideological interpretation and the drawing of certain conclusions from highly uncertain evidence still apply and will recur in the following sections.

Above all, close examination of the late Roman coins found in India reveals that their use in the subcontinent was informed by clearly symbolic and perhaps ritual contexts. Few of the modifications made to coins (with the possible exception of the ambiguous scratch marks and the rare cases of slashing or cutting) suggest an economic function for these coins in India. Rather, modifications such as piercing, the provision of imitations of varying levels of quality and the presence of red residue on some coins suggest objects which were valued for display. Scratches and slashes may also represent votive rather than economic use. That imitations were produced at all, entailing – as evidenced by die wear on some coins – the production of sophisticated cut dies to strike the imitations, demonstrates the desirability of late Roman gold coins to at least one market in contemporary south India.

The implications of the ceremonial use of coins for understanding late Roman coinage in India as a marker of trade and global connectivity are significant. Such symbolic use raises the probability that talking about Roman coins in India as evidence for



an imbalance of trade misses the point that such coins were a valued commodity on the Indian market, overvalued against their bullion content by their appearance, which traders knew could be exchanged for Indian goods. Given the insecurity of any arguments for the stockpiling of coins before shipment to India, the chronological distribution of coins by issuing emperor provides some indication of the likely chronological shape of trade, though the total numbers of coins involved means that small discrepancies from one emperor to the next should not be given undue significance. The distribution of coins, by contrast, can be used only with great difficulty as evidence for the contours of trade. Their role in display in India strongly suggests that coins would have remained in use for long after their arrival on the subcontinent and would probably have moved around extensively. Nevertheless, this does mean that their distribution patterns have the power to contribute to an understanding of ritual landscapes and the movement of elite goods within the subcontinent.

While such conclusions may be possible from a quantitative and case study analysis of the precious metal coins found in India, copper coins reveal different facets of Indian Ocean trade. It is currently impossible to speculate as to what brought them to India, precisely when (especially with respect to whether they moved in bulk or gradually over time) or what was done with them on arrival. They do, however, serve a useful purpose as markers of probable Indian connections to Sri Lanka. The very different history of collection and publication also reveals the great significance of interpreting ancient finds in terms of their modern recovery and examination more than is always the case in numismatic analysis. For an examination of Indo-Byzantine exchange, a minute understanding of the effect of modern processes of discovery, research and publication on

the survival of individual coins must be viewed alongside the large-scale, semi-conscious biases within archaeological research in related fields. There is, of course, a degree of apparent hypocrisy in levelling such criticism in a study of external contact with the Indian subcontinent. It is the contention here that acknowledging the problem is at least an improvement upon ignoring or replicating it.

## CHAPTER SIX: THE RED SEA AND THE PERSIAN GULF

### 6.1 Introduction

The coins found in India provide some evidence of their movement from the Mediterranean, but arguably reveal far more about the social and economic context of south India. Crucial to elucidating their movement westward are the archaeological and literary sources dealing with trade through the Red Sea and the Persian Gulf. These two waterways appear to have played competitive more than complementary roles in the late Roman period, but interactions between them, especially with respect to change through time, are currently difficult to piece together. Literary evidence produced in the Roman Empire provides the most significant data concerning the Persian Gulf, but this remains difficult to verify or expand upon archaeologically. By contrast, the Red Sea ports engaged in trade with the east are well represented in the surviving literature but little is said of them, perhaps because they were familiar to the authors of the literature. It is recent and extensive excavations, particularly at the ports of Berenike and Myos Hormos, which have been most important in revealing the dynamic of Indo-Byzantine trade from its western end.



**Fig. 6.1:** Map showing the Red Sea and Persian Gulf with key sites marked.

## 6.2 Textual sources on the Red Sea and the Persian Gulf

In understanding the trading infrastructure which underpinned exchange between the Mediterranean and south India in the Late Antique period, archaeology has been a comparatively recent development. Power makes the point that the Red Sea has long been subject to explorations of an archaeological nature (at least since the late eighteenth century) but the findings of these expeditions did not constitute an interpretative focus for Indo-Roman studies until the 1980s and the rise of a distinct area of ‘Red Sea studies’.<sup>515</sup>

<sup>515</sup> Power (2013) 3-4.

Textual sources for a long time held primacy in understanding especially the western terminus of trade. For the Roman period, comparatively frequent mention of the consumption of ‘Indian’ goods pointed to trade and the demand for eastern luxuries.<sup>516</sup> The *Periplous of the Erythreian Sea* offered apparently concrete data on the Red Sea ports used and the testimony of the *Christian Topography*, references in the works of Prokopios and some later hagiographical sources offered an indication of continued contact into Late Antiquity.

The complexities of the two principle narrative sources have already been examined in chapter three. The scarcity of texts dealing with Indo-Roman and Indo-Byzantine exchange presents further challenges to reconstructing either change over time or the dynamic of trade between these two important bodies of water. Examination of the literary sources rapidly reveals, however, that almost all surviving sources share an origin in a Roman or Byzantine milieu and almost all Late Antique sources emphasise or allude to the importance of the Sasanian Persian Empire in trade with India. The two most important corollaries of this are, first, that although most of the narrative sources dealing with trade from the Mediterranean to India via the Red Sea originate in this region, they usually do not deal in any great detail with Egypt or its ports. Whether because the Red Sea was comparatively familiar to the authors of texts such as the *Periplous* or the *Christian Topography* or whether the authors were simply uninterested in issues such as port infrastructure and urban development, it is significant that in most texts originating in the Roman world, ports in the Red Sea are mentioned by name but rarely is more detailed information bestowed upon their descriptions.

---

<sup>516</sup> Parker (2011) explores thematically the role of India in Roman classical thought, using both narrative sources dealing with India and references in poetic and practical texts. See Parker’s bibliography for published sources.

Second, although almost all surviving literary texts of the fourth century or later are unanimous in describing the Persians as principal movers in trade with India, they describe this trading relationship from the perspective of foreigners and outsiders. Often the tone is envious or resentful and regularly seems either poorly informed or uninterested in precisely how Persian trade with the East worked. Descriptions of ports and exchange systems are no more detailed than for the Red Sea, and in some cases such as the *Periplus of the Erythreian Sea* the Persian Gulf is entirely absent from the narrative except as something passed along the way, suggesting a space entirely closed off to Roman merchants.<sup>517</sup>

Given the indifference of the texts to the practical structure of Red Sea trading and the likely ignorance of their authors about the foreign and perhaps intentionally exclusive world of Persian trading ports, reconstructing either from textual evidence requires caution. The ways in which these two maritime and commercial spaces have been visualized for the Roman and Late Antique periods also reflects biases in literary history already explored in chapter two. Primacy has tended to be given to a western dynamic in driving trade while the role of easterners, and especially Persians, has often been assumed without further exploration. Such involvement has even been subjected to moral judgement in accordance with the sources in which such traders are found. Aksumite ‘middlemen’ for example, apart from receiving little further analysis with respect to this vague attribution, have on occasion been subject to implied condemnation for this role in a way which clearly reflects the perspective of Roman sources that any such middlemen

---

<sup>517</sup> *Periplus* chapter 36.

should either work for the Roman Empire or cease to profit from its desire for eastern goods.<sup>518</sup>

To begin with the Red Sea, it is clear that both the authors of the *Periplus* and the *Topography* had some connection to or familiarity with the Red Sea trading route. The *Periplus* begins at the northern port of Myos Hormos, while the *Topography* makes reference to various ports involved in this trade as well as to the author having worked as a merchant and travelling east.<sup>519</sup> Despite (or because of) this familiarity, the treatment of the Red Sea ports in both texts is perfunctory at best. In the *Periplus* the ports along the Red Sea north of Adulis receive a cursory mention of their names and, in the case of Ptolemais Theron, the goods which can be bought there:

Τῶν ἀποδεδειγμένων ὄρμων τῆς Ἐρυθρᾶς θαλάσσης καὶ τῶν περὶ αὐτὴν ἐμπορίων πρῶτος ἐστὶν λιμὴν τῆς Αἰγύπτου Μυὸς ὄρμος, μετὰ δὲ αὐτὸν εἰσπλεόντων ἀπὸ χιλίων ὀκτακοσίων σταδίων ἐν δεξιᾷ ἢ Βερνίκη ἀμφοτέρων <δὲ> οἱ λιμένες ἐν τῷ ἐσχάτῳ τῆς Αἰγύπτου κόλπῳ [δὲ] τῆς Ἐρυθρᾶς θαλάσσης κεῖνται... [3] Μετὰ δὲ τοὺς Μοσχοφάγους ἐπὶ θαλάσσης μικρὸν ἐμπόριον ἐστὶν, ἀπέχον τὸ πέρασ τῆς ἀνακομιδῆς σταδίου περὶ τετρακισχιλίου, Πτολεμαῖς ἢ τῶν θηρῶν λεγομένη, ἀφ' ἧς οἱ ἐπὶ Πτολε<μαι>ων τῷ βασιλεῖ θηρεύοντες ἀνέβησαν. Ἔξει δὲ τὸ ἐμπόριον ξελώνην ἀληθινὴν καὶ χερσαίαν ὀλίγην καὶ λευκὴν μικροτέραν τοῖς ὀστράκοις· εὐρίσκεται δὲ ἐν αὐτῇ ποτὲ μὲν ἐλέφας ὀλίγος, ὅμοιος τῷ Ἀδουλιτικῷ. Ὁ δὲ τόπος ἀλίμενος καὶ σκάφαις μόνον τὴν ἀποδρομὴν ἔχων.<sup>520</sup>

<sup>518</sup> Raschke (1978) 605.

<sup>519</sup> Adulis: Book Two, chapters 3, 49, 54, 55, 56, 60, 62, 63, Book Eleven, chapters 15, 19, 17; Bereneike Book Two, chapter 58; Kalliana: Book Three, chapter 65, Book Eleven chapter 15, 16, 22; Klysma Book Five, chapter 8; Male Book Three, chapter 65, Book Eleven, chapters 15, 16, 22. Book Two, chapters 54 and 56 make reference to the author's past experience as a merchant.

<sup>520</sup> *Periplus* chapters 1 and 3. 'Of the designated harbors of the Erythraean Sea and the ports of trade on it, first comes Egypt's port of Myos Hormos and, beyond it, after a sail of 1800 stades to the right, Berenice. The ports of both are bays of the Red Sea on the edge of Egypt... [3] Beyond the Moschophagoi, about 4000 stades distant... on the sea is a small port of trade called Ptolemais Theron ["Ptolemais of the Hunts"]; from it, in the days of the Ptolemies, the royal huntsmen made their way inland. The port of trade offers genuine tortoise shell, a little land tortoise, and a light-coloured variety with rather small shields. On occasion, even a little ivory is to be found there, similar to that from Adulis. The place has no harbour and offers refuge only to small craft'.

No information is given about elites, infrastructure, the built environment or the quality of life there. This accords generally well with the concise and commercial style of the author of the *Periplus* but it is noticeable that once he extends beyond the borders of the empire descriptions of locations are more likely to include features of the local population or geography. For example on the lifestyle of the Ichthyophagoi in Arabia:

Μετὰ δὲ ταύτην εὐθέως ἐστὶν συναφῆς Ἀραβικὴ χώρα, κατὰ μῆκος ἐπὶ πολὺ παρατείνουσα τῇ Ἐρυθρᾷ θαλάσσει. Διάφορα δὲ ἐν αὐτῇ ἔθνη κατοικεῖται, τινὰ μὲν ἐπὶ ποσόν, τινὰ δὲ καὶ τελείως τῇ γλώσσει διαλλάσσοντα. Τούτων <τὰ>παρὰ θάλασσαν ὁμοίως Ἰχθυοφάγων μάνδραις διείληπται, τὰ δὲ ἐπάνω κατὰ κώμας καὶ νομαδίας οἰκεῖται πονηροῖς ἀνθρώποις διφώνοις, οἷς παραπίπτοντες ἀπὸ τοῦ μέσου πλοῦς ὅτε μὲν διαρπάζονται, οἱ δὲ καὶ ἀπὸ ναυαγίων σωθέντες ἀνδραποδίζονται.<sup>521</sup>

Or the pilgrims who the author records coming to the southern tip of India:

Ἀπὸ δὲ Βακαρῆ τὸ λεγόμενον Πυρρὸν ὄρος <καὶ> ἄλλη παρήκε<ι> χώρα τῆς .....κης ἢ Παραλία λεγομένη, πρὸς αὐτὸν τὸν νότον, [ἐν ἣ καὶ κολύμβησίς ἐστιν ὑπὸ τὸν βασιλέα Πανδίονα πινικοῦ καὶ πόλις ἢ λεγομένη Κόλχοι. Πρῶτος τόπος Βαλίτα καλούμενος ὄρμον καλὸν ἔχων καὶ κώμην παραθαλάσσιον. Ἀπὸ δὲ ταύτης ἐστὶν ἕτερος τόπος τὸ Κομὰρ λεγόμενος, ἐν ᾧ τόπῳ βριάριον ἐστὶν καὶ λιμὴν, εἰς ὃν οἱ βουλόμενοι τὸν μέλλοντα αὐτοῖς χρόνον ἱεροὶ γενέσθαι χῆροι μένουσιν αἰποῦ, ἰκαῖ ἰρχόμενοι ἀπολούνται, τὸ δ' αὐτὸ καὶ γυναῖκες. Ἱστορεῖται γὰρ τὴν θεὸν ἐκεῖ ἐπιμεῖναι κατὰ τινὰ χρόνον καὶ ἀπολελοῦσθαι.<sup>522</sup>

This lack of interest in the familiar is even more striking in the *Christian Topography*, perhaps because it suits the geographical and cosmographical aims of the

<sup>521</sup> *Periplus* chapter 20. 'Immediately after this harbour begins the country of Arabia, extending lengthwise far down the Erythraean Sea. It is inhabited by a variety of tribes speaking languages that differ, some to a certain extent, some totally. The coastal area is, similarly, marked by clusters of the mean huts of the Ichthyophagoi, while the area inland has villages and pasturages inhabited by people, speaking two languages, who are vicious: they plunder any who stray from a course down the middle and fall among them and they enslave any who are rescued by them from shipwreck'.

<sup>522</sup> *Periplus* chapter 58. 'After Bakare comes Red Mountain, as it is called, and another region extends...called the Seaboard, directly to the south. Its first stopping place, called Balita, is a village on the coast with a good harbour. After this comes another stopping place called Komar, where there is a little settlement and a port; in it men who wish to lead a holy life for the rest of their days remain there celibate; they come there and they perform ablutions. Women, too, do the same. For it is said that at one time the goddess remained there and performed ablutions'.



writer to highlight the centrality and boundedness of the *oikoumene* by detailing its edges. The detailed description of Aksum, including even a transcription of the *stela* there, contrasts with the complete absence of descriptions of either Alexandria or Roman ports on the Red Sea.<sup>523</sup> It could perhaps be inferred from the literary sources that the Red Sea ports of trade were neither thriving urban environments nor highly socially stratified, since no reference is made to elite individuals or prestige architecture, but without the benefit of archaeology, this would constitute speculation from silence and with so few texts at hand and so much about which they are silent, such assertions could not be made with confidence, and as discussed below, there is now growing evidence at least for high-level consumption at these sites.

The *Theodosian Code* provides perhaps some support for this hypothesis in the form of a requirement dated 15 January 356/7 that any bureaucrat dispatched to the Red Sea or beyond not linger too long in Alexandria: ‘Nullus ad gentem axumitarum et homeritarum ire praeceptus ultra annui temporis spatia debet Alexandriae de cetero demorari nec post annum percipere alimonias annonarias.’<sup>524</sup> This legislation, requiring that civil servants make their journey within a year or risk losing their stipend, might imply that servants of the state were not keen to leave the sophisticated and wealthy environs of Alexandria for less salubrious regions.

The reconstruction of Red Sea trade from surviving literary sources is therefore almost impossible. Beyond the testimony of the texts that goods associated in the Roman mind with India could be bought and sold at these locations, nothing in the texts permits

---

<sup>523</sup> See chapter four.

<sup>524</sup> *Theodosian Code*, Book 12.12.2 ‘Nobody before going to the Axumites and the Homerites ought to stay in Alexandria for more than a year for some delay, nor after a year should he claim his living from the state’.

detailed reconstruction of these places as legal or physical entities. Power also argues that the texts, insofar as they mention the shipping of the Red Sea, have a preoccupation with India trade which may not reflect the full value and utility of these ports to either the Roman state or the surrounding economy. He suggests that much of their development and maintenance was related to the valuable mineral wealth to be derived from the eastern desert and the regions further south.<sup>525</sup> Tomber has argued, however, that based primarily on ceramic evidence, the mineral trade routes of which Power speaks operated on an entirely different trade circuit to the Indian goods using the Red Sea ports.<sup>526</sup>

While textual sources do not allow a detailed reconstruction of Red Sea infrastructure and may overstate the role of India, the Late Antique sources are in general agreement that in trading with India Roman merchants operating out of the Red Sea were at a disadvantage in comparison to Persian merchants with better access to Indian goods and merchants:

τοῖς τε γὰρ Αἰθίοψι τὴν μέταξαν ὠνεῖσθαι πρὸς τῶν Ἰνδῶν ἀδύνατα ἦν, ἐπεὶ αἰεὶ οἱ Περσῶν ἔμποροι πρὸς αὐτοῖς τοῖς ὄρμοις γινόμενοι οὐδὲ τὰ πρῶτα αἰ τῶν Ἰνδῶν νῆες καταίρουσιν, ἅτε χώραν προσοικοῦντες τὴν ὁμορον, ἅπαντα ὠνεῖσθαι τὰ φορτία εἰώθασιν.<sup>527</sup>

This observation is frequently referenced as evidence for the important (if vaguely drawn) role of Persia in trade with India. The *Christian Topography* for example, describes the nearness of Persia to India: “Ἡ Ζινδοῦ δὲ ἐστὶν ἀρχὴ τῆς Ἰνδικῆς. Διαιρεῖ γὰρ ὁ Ἰνδὸς

<sup>525</sup> Power (2013) 16-17, 37.

<sup>526</sup> Tomber (2013) 115.

<sup>527</sup> Prokopios *Wars* Book I, chapter 20.9 See note 322 (above for full translation, but especially for the present argument: ‘For it was impossible for the Aethiopians to buy silk from the Indians, for the Persian merchants always locate themselves at the very harbours where the Indian ships first put in (since they inhabit the adjoining country), and are accustomed to buy the whole cargoes.’

ποταμός, τουτέστιν ὁ Φεισώ, εἰς τὸν κόλπον τὸν Περσικὸν ἔχων τὰς ἐκροίας, τὴν τε Περσίδα καὶ τὴν Ἰνδίαν'.<sup>528</sup> The description in the *Christian Topography* of a Christian community on Sri Lanka organised under a Persian bishop is also cited as evidence for the closeness of Persia to the trading ports of the east: 'Ἐχει δὲ ἡ αὐτὴ νῆσος καὶ Ἐκκλησίαν τῶν ἐπιδημούντων Περσῶν χριστιανῶν καὶ πρεσβύτερον ἀπὸ Περσίδος χειροτονούμενον καὶ διάκονον καὶ πᾶσαν τὴν ἐκκλησιαστικὴν λειτουργίαν'.<sup>529</sup> There remains a lack of specific detail concerning how Persian ports operated but the prominence they receive in narratives of trade with India firmly establishes the comparative importance of Persian ports and coastal sites: the treatment they receive is comparable to that of the Red Sea ports and yet the access of the authors to information about these locations must have been considerably smaller.

This situation contrasts sharply with the first three centuries of the Christian era and represents one of the few opportunities to trace change through time. Pliny in the first century makes no mention of political control by the Parthians acting as a bar to maritime trade between Rome and India. The *Periplus of the Erythreian Sea*, as noted above, seems to avoid the Persian Gulf, perhaps suggesting that it was controlled or restricted, but whatever the case the author makes no mention of the advantageous position of merchants trading out of the Gulf. He also makes no mention of the presence of a distinct community of Persians or Parthians in India. This situation does not necessarily mean that Roman contact in India was any more direct or less mediated by others in the first three centuries A.D. but if mediating actors from the Arabian Peninsula, the Persian Gulf, or the

---

<sup>528</sup> *Christian Topography* Book Eleven, chapter 16. 'Sind is the beginning of India. For the River Indus, that is to say the Pheison, which empties into the Persian Gulf, separates Persia from India'.

<sup>529</sup> *Christian Topography* Book Eleven, chapter 14. 'The island also possesses a church of Christian Persians settled in the country, and a priest in Persia chose a deacon and the liturgy of the church'.

intervening regions did participate in the trade they were not perceived as belonging to a single and hostile political entity.

While the role of Persia (or earlier the Parthian state) as a political entity does not figure in the early Indo-Roman sources it is here argued that throughout Indo-Roman studies, including in analysis of the later material there has been a systematic underestimation of the dynamic role played by eastern traders in bringing goods west to the Roman Empire. The clear implication that goods primarily came *to* the Roman Empire, rather than being brought to it by Romans is visible in texts from the first to the sixth centuries. The following quotations are, for example, all familiar in Indo-Roman studies but their diachronic emphasis on non-Roman agents in trade has not yet been the focus of specific attention. In the *Periplus of the Erythreian Sea* it is noted first that:

Εὐδαιμῶν Ἀραβία εὐδαιμῶν δὲ ἐπεκλήθη, πρότερον οὕσα πόλις. ὅτε μήπω ἀπὸ τῆς Ἰνδικῆς εἰς τὴν Αἴγυπτον ἐρχομένων μηδὲ ἀπὸ Αἰγύπτου τολμώντων εἰς τοὺς ἔσω τόπους διάρειν ἀλλ' ἄχρι ταύτης παραγνομένων.<sup>530</sup>

This passage confirms that ships did move from west to east but the first cohort of traders it mentions are those moving from east to west and it does not distinguish at all between the relative volume of traffic moving in each direction. Later the author also states of the population of Sokotra that:

Οἱ δὲ ἐνοικοῦντες αὐτὴν ὀλίγοι κατὰ μίαν πλευρὰν τῆς νήσου τὴν πρὸς ἀπαρκίαν οἰκοῦσι, καθ' ὃ μέρος ἀποβλέπει τὴν ἠπειρον· εἰσὶν δὲ ἐπίξενοι καὶ ἐπίμικτοι Ἀράβων τε καὶ Ἰνδῶν καὶ τινα μὲν Ἑλλήνων τῶν πρὸς ἐργασίαν ἐκπλεόντων.<sup>531</sup>

<sup>530</sup> *Periplus* chapter 26 'Eudaimon Arabia, a full-fledged city in earlier days, was called Eudaimon when, since vessels from India did not go on to Egypt and those from Egypt did not dare sail to the places further on but came only this far.'

Here it is clear that the mixed population, drawn by the opportunities presented by trade is predominantly Arabian and Indian with Greeks added as an afterthought rather than the dominant group. Finally, the most compelling evidence in the *Periplus* which has not yet been used explicitly to argue for the dominance of east-west exchange in Mediterranean-Indian Ocean trade concerns the port of Omana:

Παραπλεύσαντι δὲ τοῦτο τὸ στόμα τοῦ κόλπου μετὰ δρόμους ἔξ ἕτερον ἐμπορίον ἔστιν τῆς Περσίδος, ἢ λεγομένη Ὀμανα. Ἐξαρτίζεται δὲ εἰς αὐτὴν συνήθως ἀπὸ μὲν Βαρυγάζων εἰς ἀμφοτέρωτα ταῦτα τῆς Περσίδος ἐμπόρια πλοῖα μεγάλα.<sup>532</sup>

Pliny's *Natural History* includes the famous statement that 'Digna res, nullo anno minus HS[D] imperii nostri exhauriente India et merces remittente quae apud nos centiplicato veneant'.<sup>533</sup> The *Christian Topography* demonstrates a similar assumption that non-Romans were the significant actors in trade between India and the Mediterranean. On the subject of traders visiting Sri Lanka the author writes: 'Ἐξ ὅλης δὲ τῆς Ἰνδικῆς καὶ Περσίδος καὶ Αἰθιοπίας δέχεται ἡ νῆσος πλοῖα πολλά, μεσῆτις οὕσα, ὁμοίως καὶ ἐκπέμπει'.<sup>534</sup> All of these texts emphasise the sending out of boats by others to trade, while not one actually refers to Roman ships being sent to trade.

<sup>531</sup> *Periplus* chapter 30 'The inhabitants, few in number, live on one side of the island, that to the north, the part facing the mainland; they are settlers, a mixture of Arabs and Indians and even some Greeks, who sail out of there to trade.'

<sup>532</sup> *Periplus* chapter 36 'After sailing by the mouth of the gulf, six runs further on you come to another port of trade of Persis called Omana. Customarily the merchants of Barygaza deal with it, sending out big vessels to both of Persis's ports of trade [sc. Apologos and Omana].'

<sup>533</sup> Pliny the Elder *Natural History* Book VI, 101. 'It is an important subject in view of the fact that in no year does India absorb less than fifty million sesterces of our empire's wealth, sending back merchandise to be sold with us at 100 times its prime cost.'

<sup>534</sup> *Christian Topography* Book Eleven, chapter 15. 'Serving as an intermediary, the island hosts many ships from India, Persia and Ethiopia and she likewise sends out ships.'

Finally, the account of Prokopios already studied in chapter four with respect to the Aksumite state also demonstrates the striking degree to which written sources place the trade with India firmly in the hands of eastern (Persian and Indian) players.<sup>535</sup> A growing involvement of known middlemen is therefore suggested by the written and archaeological sources of the Indo-Byzantine period but it is not entirely clear how far the increased presence of these players was a result of their increased activity or the more political preoccupations of later authors and/or the perceived political implications of such intermediaries, which had perhaps not been the case in the earlier centuries of trade.

Certainly it seems clear that from the fourth century onwards the involvement of Persian merchants and (whether they were state agents or not) their association in the minds of Byzantine authors with a hostile polity increased. Business dealings with the Persians clearly came to be seen as detrimental to the empire, although it must be remembered that neither of the two most detailed sources, the *Christian Topography* and the writings of Prokopios, represent the views of men principally involved in making their living through trade. The author of the *Christian Topography* (who is, in any case, far less hostile towards Persian traders) was writing in the context of a Christological worldview in which the Persian Empire was not part of the believing *oikoumene*. For Prokopios, intimately involved with the imperial court and the emperor Justinian's wars, the concerns of state security and autarchy at a time of conflict may have loomed larger than for businessmen seeking to make a living from trade in Indian goods.<sup>536</sup>

---

<sup>535</sup> See chapter seven.

<sup>536</sup> Maas (2007) 69, 75.

It is probable that the stabilisation of the Sasanian state enabled Persian merchants to make more assertive use of their proximity to India. An examination of the archaeological evidence demonstrates, however, that it is challenging to make any quantitative judgements concerning changes in Persian/Mesopotamian involvement in trade between the Roman Empire and India from the first to the seventh centuries. The ceramic analysis from Ras al-Khaimah (U.A.E.) and particularly the tell of Kush has also been interpreted by Kennet to indicate a rise in Indian trade in the fourth and fifth centuries with a subsequent lull until the ninth, at which point Chinese ceramics also begin to appear in significant quantities.<sup>537</sup> It is also clear that Roman perceptions of this involvement became much more pronounced and negative as Sasanian Persia came to occupy the role of ideological and military nemesis to the Empire.<sup>538</sup>

The surviving non-Roman sources which shed any light on Sasanian trade with India in the fourth to seventh centuries and the preceding period of Indo-Roman trade have been gathered and analysed by Whitehouse.<sup>539</sup> While valuable, however, as an antidote to the Mediterranean bias of the surviving material, they represent slim pickings for a reconstruction of commerce. The most significant sources are the surviving records of the so-called Nestorian church in Late Antiquity, which appears to have spread as far afield as Sri Lanka and possibly Java, and which was administered from within the Sasanian Empire.<sup>540</sup> These, however, suffer from a complicated and poorly-understood history of transmission. They are also entirely concerned with ecclesiastical matters. While the

---

<sup>537</sup> Kennet (2004) 69-70, (1997).

<sup>538</sup> Louth (2005) 96.

<sup>539</sup> Whitehouse (1973, 1996) and Daryaee (2009).

<sup>540</sup> Yoshiko Reed (2009) discusses the utility of Syriac Christian sources and the misnomer 'Nestorian' (74). Nevertheless, despite her assertion (70) that these sources offer a useful perspective on concepts of east and west, it is not clear that they offer any more concrete information about commercial relations.

assumption made by both Whitehouse and Daryaee that the relationship between the church and merchant communities in the east must have been strong seems reasonable, it remains entirely speculative on the basis of the surviving sources.<sup>541</sup> Seland has also attempted to reconstruct the link between religious communities and the archaeology of trade, but in all cases, while it can be demonstrated that trade and religion spread along maritime networks, it is impossible to prove an association between them beyond the convenience of shared travel.<sup>542</sup> Indeed, the only narrative source to deal with both subjects, the *Christian Topography*, fails precisely to draw that connection. While discussing a Persian church on Sri Lanka and the presence of Persian merchants there, the author makes no allusion to an economic or other connection between the two.<sup>543</sup>

The other non-Roman source used by Whitehouse and Williamson is the legend preserved in later Pahlavi and Arabic literature, but apparently dating from the Late Antique period, of Ardashir I (A.D. 180-242) and the worm:

Stripped of its mythical embellishments, including the Worm, the story is this: when Ardashir came to power, the coastal regions of southern Iran had slipped out of Parthian hands and were controlled by a local chieftain named Haftwad. Operating from a strong fortress at Kujarān, on the coast of Fārs or Kirmān, Haftwad occupied the whole littoral from Fārs to the borders of Sind and had formed an alliance with coastal tribes in Arabia. When Ardashir first attempted to depose Haftwad, his army was ambushed and cut to pieces. Following this defeat, Ardashir himself led an expedition against Kujarān. Although the battle which ensued outside the fortress may have gone in Ardashir's favour, Haftwad's patrols blocked the Sasanian supply line through the mountains. Learning this, a pretender revolted in the hinterland of Fars and plundered the city of Gūr. Ardashir was compelled to retreat from the coast and re-establish his authority in Fars. Later Ardashir again attacked Kujarān. Taking the fortress by a ruse, he eventually defeated Haftwad and built a fire temple, or perhaps even a new town, which

---

<sup>541</sup> Whitehouse (1973) 43, Daryaee (2009) 57-62.

<sup>542</sup> Seland (2012) assumes this connection throughout his article, conflating the presence of Christians with the presence of traders but this is not a contiguity which can readily be extracted from the surviving sources.

<sup>543</sup> See chapter 3 for the *Christian Topography's* reference to a Persian presbyter travelling to Sri Lanka.



subsequently bore his name: Hamza's Guzeran Ardashīr. Shortly afterwards, the Sasanians crossed the Gulf and subjugated the Arabs of Bahrain and the adjacent coast.<sup>544</sup>

This story is argued by Whitehouse to be a symbolic re-telling of Ardashir's campaigns to secure trade routes via the Persian Gulf. Again, such a reading is plausible but difficult to verify in light of the late date and allusive symbolism of the narrative. Without the underlying structure of Mediterranean source material neither the Nestorian documents nor the legend of Ardashir and the worm could reasonably provide the basis for a history of Sasanian maritime trade with India.

Finally, the inscriptions and images at the great Sasanian site of Naqsh-i Rostam are worthy of brief consideration, especially considering the extent of the realms of the Shah.<sup>545</sup> This monumental site, commemorating the victory of the Sasanian emperor Shapur I (r. 240/2-70/2) over the Roman emperor Valerian (r. 253-60) uses stone relief carvings of subject peoples paying tribute to the Shah alongside written testimony to glorify the might of the Sasanian emperors. The nature of such a display does not lend itself to reconstructing economic history since it is concerned with conquest not commerce and its only major significance to an understanding of Indo-Byzantine trade is to underscore the closeness of the Sasanian relationship with India in comparison to that of the late Roman empire. The relief carvings depict tribute being brought from India, which is considered to be a province of the Sasanian Empire.

---

<sup>544</sup> Whitehouse (1973) 32.

<sup>545</sup> Back (1978) 285-8.



**Fig. 6.2:** Section of relief carving from *Naqsh-i Rostam* depicting the surrender of the emperor Valerian to Shapur I (r. A.D. 240/2-270-2).<sup>546</sup>

In the Naqsh-i Rostam inscriptions ‘India’ almost certainly refers to the north of the subcontinent, in modern Pakistan and northern India, and the tributaries depicted probably brought their offerings via the land route from northern India.<sup>547</sup> Nevertheless, even for a consideration of the southern maritime connections between India and the west it is worth

<sup>546</sup> Image by Fabien Dany ([www.fabiendany.com](http://www.fabiendany.com) – accessed 20/06/2013).

<sup>547</sup> Daryaee (2009) 58 records another third-century inscription of Shapur I, listing his provinces as follows: ‘Persia, Parthia, Khuzistan, Meshan, Assyria, Adiabene, Arabia (*Arbayestan*), Azerbaijan, Armenia, Georgia, Segan, Albania, Balaskan, up to the Caucasus mountains and the Gates of Albania, and all of the mountain chain of Pareshwar, Media, Gurgan, Merv, Herat and all of Abarshahr, Kerman, Sistan, Turan, Makran, Paradene, India, Kushanshahr up to Peshawar and up to Kashgar, Sogdiana and to the mountains of Tashkent, and on the other side of the sea (*dray*), Oman (*Mazunshahr*).’ The position of India in this list strongly suggests that north India linked to the Persian Empire by land, rather than south India linked by sea is intended.

emphasizing the geographical advantage enjoyed by the Persian Empire in adjoining India so directly.

### **6.3 Archaeology and new developments**

Archaeologically, the extent and significance of excavations for deepening an understanding of trade structures between the Mediterranean and south India differs considerably between the Red Sea and the Persian Gulf. The data yielded by analysis of coastal sites along both watercourses will here be examined with a view to nuancing and supplementing the view provided by literary sources alone.

#### ***6.3a Archaeology and the Persian Gulf***

Coastal excavations in the Persian Gulf have thus far done little to answer the questions posed by the literary sources. While the Persian Gulf remains a tantalizing and important part of Indo-Byzantine trade as this can be reconstructed from the narrative sources, little can be gleaned about the nature of Sasanian involvement in this trade. Only one site of relevant date and location has been extensively excavated and published, that of Siraf on the northeastern coast of the Gulf. This was excavated between 1966 and 1974 under the auspices of the British Institute of Persian Studies.<sup>548</sup> As noted above, the ceramic assemblages from Ras al-Khaimah have been used to argue for an up-turn in trade under the later Sasanians. Numismatic evidence has also been deployed by Kennet to suggest that the Arabian Peninsula was not in fact closely linked to trade routes in the

---

<sup>548</sup> Whitehouse (2009) summarises the excavations carried out between 1966 and 1973 by the British Institute of Persian Studies.

Sasanian period. However, in this case, the sample size and the implication of hoard evidence clearly undermined his conclusions. The fact that only 52 usable coin finds of the Sasanian period have been discovered in the Arabian Peninsula is certainly indicative of the fact that the area was not part of a complex monetised economy, but the small sample makes drawing further conclusions impossible.<sup>549</sup>

Siraf was a fort of Sasanian origin, apparently settled in the late second century A.D. and subsequently developed as a Sasanian coastal fortification. The site became from the ninth century onwards one of the leading ports in the Muslim maritime network.<sup>550</sup> Prior to its ninth-century rise to commercial prominence, however, it is unclear whether Siraf functioned as a port or only as a defensive structure. The finds of foreign goods at the site suggest some maritime contact with east and west in the pre-Islamic phases, including a coin of Constantine II and Chinese pottery.<sup>551</sup> The structure of the site at this early period also suggests that major investment was in defensive structures rather than harbour facilities, residential or warehouse space or any other port infrastructure.<sup>552</sup> Perhaps in light of the support given to the picture of thriving Sasanian maritime trade by the Roman sources, Whitehouse and subsequent analysts have sought to argue from the Siraf assemblage that it was a thriving commercial hub in the Late Antique period, but these arguments have consistently suffered from the thinness of the supporting data. The site of Sir bani Yas in the United Arab Emirates also promises to yield more information concerning coastal settlement in the Persian Gulf. The monastery, believed to have been founded around A.D. 600 and abandoned around 750, may provide more concrete

---

<sup>549</sup> Kennet (2008) 59-60.

<sup>550</sup> Whitehouse (2009) 9, 103, 113.

<sup>551</sup> Whitehouse (1972) 70 and Whitehouse (1970) 8.

<sup>552</sup> Whitehouse (2009) 98-9 arguing against Piacentini (1992) that although the site was a fort it also had a commercial aspect.

indications of the relationship between Christian communities in the Sasanian Empire and networks of trade.<sup>553</sup>

One other site of possible significance has been excavated but has been far less extensively published than Siraf. Rishahr, located in southern Iran, has yielded some evidence for long-distance commercial ties with the east in the form of Red Polished Ware from northern India:

at Akota, it was associated with Graeco-Roman sealings, an early Kshatrpa coin and wares of "Indo-Parthian [Red Polished Ware]" type; at Kolhapur, it was associated with Roman imports in deposits of the Satavahana period; at Bahal in Khandesh, it occurred again in Satavahana contexts; at Amreli, it was found with coins of the second and third centuries. Sherds from Maheshvar were dated to the third and fourth centuries... most of the find-spots of Red Polished Ware are in Gujarat and Maharashtra in north-west India, with a scatter of finds (some of which may be imitations) to the north and east. The examples from Iran occur exclusively on the coast and without doubt were imported as a by-product of maritime trade between the Gulf ports and Scythia in the Parthian and early Sasanian periods.<sup>554</sup>

Excavations along the coast of the Persian Gulf have undoubtedly suffered in the previous four decades as a result of instability in the region.<sup>555</sup> As examination of archaeological developments along the coast of the Red Sea demonstrates, however, understanding the trade of the Persian Gulf is also hampered by the complexity and paucity of data concerning the wider Sasanian economy. The archaeology of the Red Sea ports can be interpreted in light of the heavily documented and increasingly clearly understood economic and political infrastructure of the late antique Roman state,

---

<sup>553</sup> Thomas (2010).

<sup>554</sup> Whitehouse (1973) 39.

<sup>555</sup> Power (2013) 3 highlights the extent to which instability affecting excavation along the coast of the Persian Gulf directly benefitted Red Sea archaeology as scholars working on the Persian Gulf area out of necessity shifted their research focus to the Red Sea.

especially in Egypt.<sup>556</sup> Material evidence can therefore be read in light of wider government policy and the networks of exchange known to have connected the Red Sea coast to a much larger commercial system linked to the Mediterranean via Alexandria.<sup>557</sup>

In the case of the Sasanian Empire, by contrast, much debate remains over questions as fundamental as the nature of state organization (sophisticated and oriented towards taxation in the manner of the Roman Empire, or superficial and focused on exaction of tribute) and the economic life of urban and rural areas.<sup>558</sup> Few Sasanian cities have been excavated and the case study below of Sasanian coinage in the Indian Ocean trading sphere reflects wider issues about the comparative absence of Sasanian coin finds in areas which would suggest the economic function of a currency.<sup>559</sup> When the underlying structures of the state and its associated economic subsistence are so little understood, reconstructing what must have been by any measure a largely superficial and upper mid-level to elite layer of commerce with India, especially on the basis of limited archaeological excavation becomes extremely challenging.

---

<sup>556</sup> Bagnall (1993) 68-77, 310-14.

<sup>557</sup> Tomber (2009) 43-44 demonstrates, for example, the enormous advantage in provenancing ceramics from Red Sea port sites of having well understood fine and coarse ware typologies for Roman pottery, which can be traced narrowly to regions within the Empire.

<sup>558</sup> It is striking, for example that in Kennet and Luft (2008) conclusions about the nature of Sasanian government include the hypothesis that Sasanian trade guilds were controlled and administered by central government in city bazaars also regarded as having been in some way reliant upon state development (Simpson 72) alongside the conclusion from excavations at Merv that Sasanian cities lack any evidence for centrally organised latrines, drainage or street clearance (73). Howard-Johnston points out that the structure of the Sasanian state is difficult to discern but argues that it appears to have been 'more brittle' than the Roman state with greater challenges to cohesion as a land-based state accommodating very varied cultural groups and modes of living (79), while Curtis asserts that 'the Sasanian state was highly centralised, [therefore] we can assume that the die carvers working on these [Sasanian] coins must have followed strict iconographic guidelines set down by the central authority, which is the king and his royal court' (137).

<sup>559</sup> Sasanian coinage was issued in silver with occasional special issues in gold. While terms for the standard silver denomination of the Sasanian Empire vary, the terms *drachm* (pl. *drachmae*) is used here. The excavations at carried out at Merv (1992 and 2000) by the British Museum remain the most significant investigation of a major Sasanian urban centre (Simpson (2008) 65-78). On Sasanian coinage: Alburn and Gyselen (2003); Curtis, Askari and Pendleton (2010), Göbl (1971), Schindel (2004, 2012).

### ***6.3b Case Study – Sasanian coins (evidence and absence)***

The subject of Sasanian coins in the Indian Ocean trade network merits a full case study since it entails not only the excavations along the coast of the Persian Gulf but also those along the south Indian coast discussed in chapter seven, and the archaeology of Aksum examined in chapter four. Indeed, the role (or lack thereof) of Persian coinage in Indian Ocean trade remains one of the striking challenges in Indo-Roman and Indo-Byzantine studies and exhibits a similar problem to the wider question of Sasanian trade: a discrepancy between literary and archaeological evidence. The dominance of Persia in literary accounts of trade with India has been highlighted above. The extract from the *Christian Topography* examined in chapter three has been used quite extensively by scholars to argue that this included the use of Sasanian coinage in Indian Ocean trade.<sup>560</sup> General accounts include the assertion that *drachmae* were commonplace in the ports of India and Sri Lanka.<sup>561</sup>

It is therefore noteworthy that no finds of Sasanian coins have been published from south India. While some have been unofficially reported from Gujarat and may reside in private collections, the total absence of Persian coin finds from places further south is startling.<sup>562</sup> From Sri Lanka there are three documented finds of Sasanian coins with fairly secure provenances on the island and one possible local imitation.<sup>563</sup> In India they have not been reported as part of hoards containing Roman or Byzantine coins and have not been reported as single finds. My own research in museum collections in Chennai and

---

<sup>560</sup> Chapter three, 87.

<sup>561</sup> Bopearachchi (2006a) 195, Boulnois (2005) 137, Choksy (2013) 380-1, De Romanis (1997) 187-8.

<sup>562</sup> Private communication by S. Bhandare (Ashmolean Museum, Oxford) 2011.

<sup>563</sup> Darley (Forthcoming).

Hyderabad has not unearthed any further evidence of unpublished finds. The argument that silver was not desired in Indian Ocean trade is unsustainable since, at least until the late second century, Roman trade with India was conducted in *denarii* and the value of these in local culture is amply demonstrated by the vast hoards which have on occasion been discovered and by the use of silver in coinage minted in the subcontinent in pre-modern periods.<sup>564</sup> Furthermore, the extent to which the decline of *denarii* in coin finds in India coincides with the increasing debasement of the silver content strongly suggests that it was lack of trust in the fineness of Roman silver rather than a loss of appetite for silver *per se* which generated the change in Roman trade with India to using *aurei*.<sup>565</sup>

The complete absence of Sasanian coin finds from south India strongly suggests, therefore, that silver *drachmae* never circulated within the Indian Ocean trading networks as a major unit of exchange. This situation differs considerably from the northern land route to the east, along which Persian coinage is a common discovery and vastly outnumbers Roman or Byzantine coin finds.<sup>566</sup> The absence of Sasanian coin finds is equally notable at Aksumite sites, though here the testimony of Prokopios may shed some light. The desire of Justinian I that the Aksumites take over part of the silk trade from the Persians suggests that Aksum was not at that point engaged in direct trade with Persia.<sup>567</sup>

---

<sup>564</sup> Turner (1989) 47-86 lists the following large hoards of *denarii*: Akenpalle (AP) c. 1531 pieces, Akhilandapuram (TN) c. 30 pieces, Budinatham (TN) 1398 pieces, H.A.L. Airport (Ka) 256 pieces, Iyyal (Ke) 117 coins of which 71 *denarii*, Karur (TN) found in c.1856 – hundreds to thousands of *denarii*, found in 1878 – c. 500 pieces, Kathanganni (TN) 233 pieces, Konderipatty (TN) 35 pieces, Nasthullapur (AP) 39 pieces, Vellalur (TN) 522 pieces, Yeshwantpur (Ka) 163 pieces.

<sup>565</sup> Turner and Cribb (1996) 312.

<sup>566</sup> Leslie and Gardiner (1996) 12.

<sup>567</sup> Prokopios *History of the Wars* Book 1, chapter 20.9-12.



An analogous conclusion in the case of south India would be that Persian traders were not in direct contact with the subcontinent itself, or at least they did not travel there to acquire Indian goods. This conclusion finds support in the literary sources examined above, especially the account of Prokopios, which suggests that merchants from the east (presumably India) travelled west and traded their goods at Sasanian ports, thereby explaining the absence of coin finds from India despite the impression gained from Roman and Byzantine written sources that the Sasanian Empire had a dominant role in commerce with India.



**Fig 6.3:** Image of a Sasanian drachm of Yazdgerd II (r. A.D. 438-57) 29 mm, 3.68<sup>568</sup> g.

The one place, however, where the absence of Sasanian coinage is even more striking than in India is in the Sasanian Empire itself, and especially at the coastal site of

<sup>568</sup> Crowned bust right / "Fire" in Pahlavi to left, 'nwky' in Pahlavi to right, fire altar with attendants, holding staves, and ribbon, "rast" in Pahlavi on central column. Ex Bellaria Collection. <http://en.wikipedia.org/wiki/File:YazdII.jpg> (accessed 20/06/2013).

Siraf.<sup>569</sup> The lack of numismatic evidence here and at urban sites in the Sasanian Empire generally raises major questions about the nature of the Sasanian economy and the importance of circulating precious-metal coinage in its operation, which are at present far from being answered.<sup>570</sup> What does seem clear, however, is that numismatic evidence alone does not suggest the importance of Sasanian Persia in Indian Ocean trade, to which the literary sources clearly allude. The lack of Persian coinage in India and Aksum may suggest that the Persian Gulf was the nodal point to which traders from east and west came to exchange goods, resulting in Persian coinage not needing to travel, though one might still expect traders from east and west to have carried Persian silver back with them even if Persian merchants did not move in large numbers. Evidence is also examined below demonstrating that the (already slim) physical evidence for Indians at western and Arabian sites from the first centuries A.D. actually seems to decline from the fourth century onwards, at around the same time that the political situation of the Sasanian state may have helped to foster a more assertive role in trade. It is intriguing that the author of the *Christian Topography* explicitly compares the Roman and Persian empires in terms of their currency. The fact that Roman currency is accepted throughout the world is considered to be a mark of divine approval of the Roman state.<sup>571</sup> Nevertheless, if Roman rather than Sasanian coinage had been the currency of use in the Indian Ocean trade, thereby explaining the absence of Sasanian coins, then finds of Roman currency in

---

<sup>569</sup> The excavation of Sasanian layers at Siraf yielded one coin of Constans II and thirteen Sasanian coins (Whitehouse (1972) 87).

<sup>570</sup> The limited excavation of Sasanian urban sites has already been alluded to but in addition to Siraf, the excavations at Kush and Merv also demonstrate a distinct shortage of coin finds (Simpson (2008) 70 refers to 'what appear to be clay moulds for the casting of coin flans' at Merv but not to any coin finds, while Hobbs (1995) notes the discovery of Roman coins at Merv. Kennet with Krahl (2004) 13 note two coins which contributed to the dating of Kush). The very small number of Sasanian coins from eastern Arabia already mentioned (Kennet 2008) may represent an outlying and not heavily monetised or economically vibrant part of the empire but this remains uncertain given the paucity of evidence from elsewhere in the Sasanian Empire.

<sup>571</sup> *Christian Topography* Book Two, chapter 68.

Sasanian lands, especially coastal sites, would be expected. A better understanding of the role Sasanian coinage played within the empire would help to place Sasanian coinage found (or not found) outside the empire's borders within a more secure economic context. It is possible, for example, that Sasanian economic transactions were more regularly organised around the exchange of goods, and that this was true of dealings with foreign traders too. At present, however, the same limitations on understanding wider Sasanian social and economic patterns (limited excavation and minimal written sources) severely weaken any economic conclusions drawn from the distribution of Sasanian coinage within the Indian Ocean trading network. The testimony of textual sources is suggestive but the only source to mention Sasanian coinage specifically (rather than the more general role of Persians in trade) remains the *Christian Topography*. Given the author's likely echoing of the story of Pliny in his account of the king of Lanka approving of the Roman state on the basis of its coinage, and the apparent desire of the author to contrast the divinely approved Roman Empire with Persia, it cannot be assumed that the story relates to real coins circulating in the physical space of Lanka. It may be that the text refers to coins as symbols for the two competing polities (and here it is striking that the author describes the king as being present in their coins, emphasising this congruity), circulating in the rhetorical 'other space' of Lanka provided by Pliny's earlier literary motif. Whether Sasanian merchants moved in order to trade or whether Indian merchants came to Persia is currently impossible to demonstrate but it does seem clear that Sasanian coined metal was either not accessible to traders in India or was not a product desired in the subcontinent.

### **6.3c Archaeology and the Red Sea**

If the Persian Gulf remains better illuminated by literary sources written mainly by foreigners, the Red Sea trade route is now far better understood as a result of archaeological excavations, primarily in Egypt. Beginning in the early 1990s major and well-published excavations have been undertaken at the trading ports of Adulis, Aila (Aqaba), Berenike and Myos Hormos (Quseir al-Qadim) and the fort of Abu Sha'ar, though Power traces the much longer history of excavation and exploration which resulted in the discovery, identification and early study of these sites.<sup>572</sup> The port of Leuke Kome remains unidentified, as does that of the island fortress of Iotabê, and minor excavations have revealed something of the history of Klysmâ (Suez).<sup>573</sup> The excavation and publication of these sites, including more detailed examination of transport vessels and local and foreign ceramic wares and the deployment of archaeobotanical investigation has enabled a clearer picture to emerge of the role of these transit ports in funnelling goods from the east towards the Mediterranean.<sup>574</sup> In particular, archaeological excavation has enabled a more detailed understanding of four aspects of this trade route.

First, excavations have significantly shaped an understanding of the infrastructure of Red Sea ports sites. In the 1950s, on the basis of literary evidence and logical deduction

---

<sup>572</sup> Adulis: Peacock and Blue (2007). Aila: Dolinka (2003), Parker (2009). Berenike: Sidebotham and Wendrich (2007). Myos Hormos: Peacock and Blue (2006, 2011). Qana': Sedov (1992, 1994). Khor Rori: Avanzini (2000, 2001, 2002, 2008), Avanzini, Benvenuti, Buffa *et al.* (2002), Avanzini, Buffa, Lombardi *et al.* (2001), Avanzini and Orazi (2001). Adulis: this thesis, chapter four, Peacock and Blue (2007) also constitutes an important Red Sea excavation and survey. On the publication of sites since the 1990s, Power (2013) 1-3.

<sup>573</sup> Leuke Kome: Nappo (2010), Young (1997). Iotabe: Mayerson (1992, 1995). Klysmâ: Bruyère (1966), Ward (2007).

<sup>574</sup> The work of Tomber on the ceramics of the Red Sea has been crucial and can be found in publications on Egypt generally (2000), Aila (2004 with assemblages from Berenike and Myos Hormos), Berenike (2007) and, Myos Hormos (2002, 2011) and is summarised in the conclusions reached in her synthetic work *Indo-Roman trade: from pots to pepper* (2009). Cappers (1999, 2006) on archaeobotanical research at Berenike.

from the known location of ports in the Red Sea, Wheeler argued that these sites must have been transit rather than terminus ports (an important distinction which Wheeler was crucial to introducing to Indo-Roman studies).<sup>575</sup> He argued that goods simply moved through these sites without their position along trade routes necessarily resulting in the concentration of wealth or market activity at them. By contrast, cities such as Alexandria with its full panoply of governmental, ecclesiastical and market environments and a large population including elites with considerable disposable wealth functioned as terminus ports at which goods finally reached their target market and might be purchased, re-packaged and trans-shipped to still more distant markets.<sup>576</sup>

Excavations at Myos Hormos and Berenike have largely confirmed, but also nuanced, this picture. They have revealed little evidence for social stratification or large residential communities.<sup>577</sup> However, they do seem to have been sites of consumption of large quantities of the high-status goods which were brought in from the east.<sup>578</sup> While not significant urban sites and in some respects physically quite difficult spaces to inhabit, therefore, these settlements seem to have supported populations who enjoyed a diverse diet, made use of high-status ceramic types in their daily life and may have used gems and

---

<sup>575</sup> Wheeler (1954b) 135.

<sup>576</sup> Monks (1953) and Hollerich (1982) explored the considerable commercial role of the bishops of Alexandria in the grain trade of the city, highlighting the direct economic significance of Alexandria's ecclesiastical prominence, aside from the general economic pull exerted by a major urban bishopric by virtue of its 'central place' status. Scott (1932) highlights the import duties imposed at Alexandria, demonstrating the wealth of luxury goods which found their way to the city. Alston (1998) examines more generally the role of Alexandria as the city hub of the Egyptian economy in the Roman period. Empéreur (1998), though focusing on the Hellenistic and primarily Roman imperial periods, further highlights the artisanal and commercial centrality of Alexandria for the Egyptian economy.

<sup>577</sup> Peacock and Blue (2011) 345 emphasise the generally rudimentary nature of residential structures at Myos Hormos without any obvious elite buildings, though some scattered finds of marble may constitute evidence for some Roman-period efforts to create more luxurious structures, or could be the remains of traded stone passing through the port. At Berenike Sidebotham and Wendrich (2007) 371 make no reference to elite residential buildings and even government or municipal structures with the possible exception of a bathhouse (perhaps attested by the presence of hard-fired bricks usually used in the hydraulic system of Roman baths) are absent.

<sup>578</sup> Tomber (2009b), 60-61.

other luxury goods at the site.<sup>579</sup> The environment around Berenike, especially with regard to access to fresh water suggests that the majority of the population may have moved to the site seasonally to cater to ships leaving and arriving on the annual monsoon winds but Tomber's analysis of ceramic finds linking these sites not only to India but also to east Africa and southern Arabia has demonstrated that they may have maintained a trading presence throughout most of the year, and that fluctuations in population or volume of trade at the site cannot be assumed to denote a transient or semi-permanent settlement.<sup>580</sup> There is, furthermore, evidence in contrast to most of the Indian sites examined in chapter seven, for some investment and permanence in the built structure of the sites in the form of religious buildings, including a basilica at Berenike and a small stone building at Myos Hormos tentatively theorised to have been a synagogue.<sup>581</sup> These buildings also suggest the mixed nature of the population at these ports.

While all sites have yielded large quantities of ceramics, fine wares do not feature prominently in the assemblages (which might suggest either trade in fine wares or large wealthy populations), but are a constant presence, hinting at permanently or routinely resident populations with some access to high-status goods.<sup>582</sup> The majority of finds are of

---

<sup>579</sup> Tomber (2014) 50-57.

<sup>580</sup> The lack of water and therefore both the cost and difficulty of maintaining a population and the possibility that occupation may have been partially seasonal is common to both Myos Hormos (Peacock and Blue (2011) 346-7) and Berenike (Sidebotham and Wendrich (2007) 372-4). Tomber (2014) 49-52 on the limited evidence for seasonal occupation at Myos Hormos.

<sup>581</sup> Tomber (2009) 62, 61.

<sup>582</sup> The publication of finds from Myos Hormos by Peacock and Blue (2011) does not have a section for finewares of any period, reflecting their absence, but includes sections on pots with writing (Tomber 5-10) in which none of the examples occur on finewares. Also included are: analysis of Roman vessel stoppers, used on transport ceramics (Thomas 11-34), examination of the amphora wharf discovered at the site (Blue 35-42) and ceramic lamps (Peacock 47-56) terracotta figurines (Thomas 79-84) both of which ranged at the port from crudely utilitarian to mid-level mass-produced examples and, from the Islamic period an examination of the very few sherds of Celadons and Qingbai (Bridgman 43-5) which constituted the only (and later) signs of finer ceramics, probably imported to the site and intended for further trade. At Berenike too, the majority of ceramic finds seem to be *amphorae* with some finds of African Red Slip Ware (Tomber (2007a) 177) and

amphorae, however, suggesting the shipment of goods, while coarse wares seem to have served most local needs and the uncommonly good conditions for the preservation of organic material at Myos Hormos illustrates the elsewhere often invisible role of leather, wood, textile and cordage and basketry products in meeting the daily and household needs of the resident population.<sup>583</sup> Elite goods such as glass and precious metal are found at these sites in quantities suggesting some local consumption and access to wealth. The emphasis in glass finds on small vessels, rather than on window glass, for example, however, highlights the difference between on site use of high-status goods, and the levels of wealth and physical comfort and convenience available in major urban centres.<sup>584</sup> Coinage is rare on these sites, though does occur, and there are certainly no foci of single-finds which might suggest a marketplace. Luxury goods from the east almost certainly passed through these ports on their way via desert and Nile routes to Alexandria, and they were consumed on these sites. Buying and selling, perhaps of whole shiploads, may have taken place, but the import of these goods did not precipitate the development of complex market systems or social hierarchies at these Red Sea ports. Even the finds of peppercorns at Berenike, the largest concentration at any Roman site, confirm this hypothesis by their

---

evidence of Eastern Desert Ware, a handmade and locally produced ware (Barnard and Rose (2007) 183-199).

<sup>583</sup> In addition to wood and other organic products used for maritime activities, the 2011 publication of the finds from Myos Hormos revealed the importance and value (demonstrated by evidence of repairs to many finds) of leather goods at the site (Phillips 135-54), evidence of non-maritime wooden goods (Whitewright 167-78), significant finds of matting, basketry and cordage (Handley 289-320) and huge quantities of textiles (Handley 321-34). The conditions of preservation at Berenike were less favourable to organic material but the site nonetheless yielded textiles (Wild and Wild (2007) 225-27), Wild and Wild (2005) 11-16 and basketry and cordage (Wendrich (2007) 228-32).

<sup>584</sup> Though nails and other utilitarian metal finds were in evidence at Myos Hormos only one precious metal find was recorded, in the form of a stone plaque of the Roman or late Ptolemaic period, decorated with gold leaf (Copeland (2011) 89). Fairly considerable quantities of glass were uncovered from pre-Islamic contexts at Myos Hormos, mainly in the form of *unguentaria* (small vessels of unknown purpose often described as perfume or cosmetic bottles), but many fewer examples were discovered of possible window glass or painted or multi-coloured glass (Peacock (2011) 57-72). Precious metal finds from Berenike included a silver coin the western Kshatrpa king Rudrasena III of western India (Sidebotham (2007) 210) but aside from this remarkable numismatic discovery the metal finds at the site were copper, copper alloy, lead and iron, primarily of a utilitarian character, such as nails (Hense (2007) 214) but also including shop weights (215-16).

very bulk: the large containers of pepper are likely to have been in storage awaiting transportation.<sup>585</sup> The same likely applies to Roman and Byzantine coinage which reached India from these ports. It is not found in large quantities at these sites and may already have been packed for travel by the time it reached them.

In addition to confirming the image derived from literary sources of the Red Sea ports as primarily transit sites, the archaeology of the Red Sea has provided unrivalled data concerning the people resident within these ports who are mostly absent from the written sources or whose presence is implied but not confirmed. Archaeobotanical evidence has indicated the possible presence of Indians at Berenike, in the form of rice grains found in midden contexts. The quantity discovered and the location suggests that this was for local consumption but may also have been a trade item. Cappers examines the contention that rice was not well-known or used in the Roman Empire and demonstrates that there is a possibility that rice was traded from India and grown in Israel-Palestine, though its occasional use in Roman recipes does not suggest that it functioned as a staple.<sup>586</sup>

A further archaeological trace of Indians in the Red Sea pre-dates the fourth century but certainly indicates that at the height of Indo-Roman trade in the late first and early second centuries, Indians may have had a presence in the Red Sea. Several *ostraka* have been discovered at Myos Hormos and Berenike with graffiti in Tamil Brahmi.<sup>587</sup> The scratched inscriptions are short and appear to be personal names. These sherds provide little information about the individuals mentioned beyond a name. They may also have

---

<sup>585</sup> One storage vessel alone at Berenike (vessel 10.361) contained 7.55 kg of black pepper (Bos (2007) 260).

<sup>586</sup> Cappers (2006) 104.

<sup>587</sup> The pottery carrying Tamil brahmi inscriptions from Myos Hormos are published by Tomber with Graf, Healey, Römer-Strehl *et al.* (2011) 8-9, while those at Berenike have been published by Mahadevan (1996a, 1996b) and Saloman (1991).



been the product of goods rather than people travelling if sherds were inscribed then transported (though it is more likely that sherds were thus inscribed after the vessel had already broken). Nevertheless, they are a rare personal connection to individuals far from their country of origin, engaging in what must have been the culturally mixed but largely invisible human world of Indian Ocean trade networks. While this archaeological evidence appears to support the revised impression already extracted from written sources, however, of Indian or eastern traders moving west, it is far from conclusive. As noted above, the site of ed-Dur in southern Arabia highlights possible Indian connections. Like the Tamil-Brahmi inscriptions at Red Sea sites, however, these are datable only up to the second century A.D. The same is true of the coin of King Rudrasena III, discovered at Berenike.<sup>588</sup> The later centuries of Indo-Byzantine exchange reveal markedly less evidence for the presence of Indians in western contexts. It is argued here that while not conclusive (since it is extrapolated mainly from absence of evidence) the decline in evidence for Indians in the west and the simultaneous decline, from the third-fourth centuries of Roman-Byzantine coin evidence in India supports the hypothesis that Persia began to exert greater influence as a meeting point for trade coming from India and the Red Sea, though perhaps without using (its own) coinage as a medium to transact such a role.

The third area of Red Sea trade routes which archaeology has helped to illuminate is that of goods traded. Of all of the information provided by the extant literary sources, the goods most commonly bought and sold at ports feature prominently. Not only are such exchanges described in the narrative sources, but documents such as tax regulations and the Muziris Papyrus, a first-century contract for goods moving between the Red Sea coast

---

<sup>588</sup> See note 590.

(probably Myos Hormos or Berenike) to Koptos, and the arrangement of a loan at the south Indian port of Muziris reveal minute details.<sup>589</sup> Above all these written sources provide a route into trade goods which do not survive archaeologically. They preserve details of live animals, slaves and luxury goods such as spices and animal products like tortoise shell.<sup>590</sup>

What these sources do not consistently include has also been noted, however. Many of the legal sources focus on extremely rare luxury goods but neglect to mention products which seem to have dropped below the threshold of elite goods. Black pepper, for example, is not mentioned by tax tariffs on goods entering the Red Sea.<sup>591</sup> The other feature of these documents is that owing to their Mediterranean origin they are little concerned with the things exported from the Roman world to India.

Finally, the archaeological excavations of the Red Sea ports provide vital data concerning the chronological change in this trading environment. While the surviving narrative and other written sources provide temporally dispersed moments of comparative clarity, these focus overwhelmingly in the first two centuries AD and are difficult to string together into a coherent narrative of change. It is in determining sometimes unexpected patterns of change over time that the archaeology of the Red Sea ports has been most valuable though Power demonstrates the still prevalent tendency to treat the written

---

<sup>589</sup> Harrauer and Sijpesteijn (1985), Casson (1986a, 1990).

<sup>590</sup> The Alexandrian Tariff (quoted in Miller (1969) Appendix 279-80) includes reference to Babylonian and Parthian furs (*pelles Babylonicae, pelles Parthicae*), ivory (*ebur*), lions and lionesses (*leones, leaenae*), leopards (*pardi; leopardi*), panthers (*pantherae*) and Indian hair (*capilli Indici*).

<sup>591</sup> Significantly black pepper is absent from the Alexandrian Tariff, though *piper longum* (long pepper) and *piper album* (white pepper) are both referenced as being taxable, thereby suggesting that by the date of issue of the tariff black pepper had become sufficiently widely used and available in the Roman Empire as to be exempt from a tariff on luxury goods. Sidebotham (1990) 16 in his review of Casson's critical edition of the *Periplus of the Erythreian Sea* also points out that the text is primarily interested in luxury goods and does not refer to staples which are known or surmised from other texts to have been traded via the Red Sea.

evidence of the first two centuries as normative and to skew interpretation of the archaeological data accordingly by both giving less attention to third-century and later archaeology than its quantity warrants and by contextualising it entirely in terms of these written sources.<sup>592</sup> Nevertheless, archaeological excavation has demonstrated not only the expected contraction of the late second and early third centuries but also an unexpected degree of revival in the late fourth and fifth centuries.<sup>593</sup> As chapter five demonstrated, insofar as coin finds in India can be used to trace the chronology of commerce, numismatic evidence too supports the picture of an up-swing in trade around the reign of Theodosius II. It is also clear that there was a shift towards more northerly Red Sea ports in Late Antiquity. The precise reasons for this are unclear.

Seland has argued that the northerly move represents efforts to bring this trade more closely under government control and scrutiny.<sup>594</sup> Although there is insufficient supporting evidence to uphold such a decisive statement about the role of imperial authorities in trade, it may reflect the greater concern both by state and private operators to locate ports close to the imperial heartlands and in a few more defensible locations due to recurrent hostilities with Sasanian Persia. The lack of defensive structures at any excavated Red Sea port site in the period under study suggests caution on this subject, however. Power provides the most recent analysis of the Red Sea archaeology and has the following suggestion on the apparent shift northwards, with its own underlying assumption about state economic systems in late antiquity and about the importance of the Aksumite Empire to Red Sea trade generally and Roman involvement in Red Sea trade specifically:

---

<sup>592</sup> Power (2013) 7-8.

<sup>593</sup> Tomber (2009) 154-70 summarises the collected evidence for two phases of Red Sea activity (early and late Roman).

<sup>594</sup> Nappo (2009) 72.

Procopius writes that, about 530, “the Emperor Justinian put in command of as many clans as possible Arethas, the son of Gabalas, who ruled over the Saracens of Arabia, and bestowed upon him the dignity of king, a thing which among the Romans had never before been done.” The frontiers of the east were thus entrusted to the Ghassanids of Jabiya, semisedentary and assimilated Christian Arab allies of the Byzantines, in a move intended to reduce expenditure and free up resources, what in today’s parlance would be roundly applauded as ‘economic rationalization.’ Similarly, Justinian employed what have traditionally been regarded rather negatively as tax farmers to run the Red Sea customs post at Iotabe – “trusted men who were appointed to levy taxes for the emperor” – though this situation might be more positively received today as “public-private partnership.’

This clear policy toward gearing down the expensive state role may further have involved the abandonment of the southern Byzantine ports, while at the same time devolving to Aksum and Himyar control of the import of Indian Ocean produce; in some sense, the Aksumites were to the Red Sea frontier what the Ghassanids were to the Syrian frontier. Clysma and Aila then became the leading Byzantine ports, visited by ‘Indian’ merchants who bore the cost and risk of shipping and policing in Red Sea waters, and were no doubt heavily taxed by Justinian’s officials.<sup>595</sup>

In the absence of further archaeological evidence it remains impossible to know why the southerly Red Sea ports of the Roman Empire witnessed a contraction in the sixth century, but the explanations put forward will no doubt continue to demonstrate the preoccupations (military, private/state economic, environmental) of their proponents.

#### **6.4 The Roman context**

These four features of Red Sea trade (the infrastructure of transit ports, the lifestyle of their inhabitants, the goods traded through such ports and change in trade over time) can be drawn with considerable clarity as a consequence of archaeological investigation. Placing both the written and material sources into the wider framework of Roman economic history, however, further demonstrates the current difference between

---

<sup>595</sup> Power (2013) 67-8.

reconstructions of trade with India from the perspective of the Red Sea and the Persian Gulf. In the case of the latter body of water, the extremely impressionistic and fiercely debated accounts of the Sasanian economic system, drawn from little written material and complex and limited archaeology, provide unsure foundations upon which to construct a more detailed account of trade outside the imperial sphere.

In comparison, while Roman and early Byzantine trade with India remains difficult to picture in detail and while this study emphasizes the need to be candid in scholarly literature about how little is known about large areas of this trading system, the contextual understanding of Roman economic systems adds texture and substance to the regionally focused evidence of textual sources and excavations along the Red Sea coast. A clear example of the importance of such context, for which no comparable Sasanian data exists, concerns the role of coinage within the wider Late Antique economy, and in particular, the legislative measures which must have had implications for traders wishing to engage in commerce with India. The discrepancy between the legal strictures concerning the export of specie from the Roman Empire and the archaeological and textual reality of precious metals leaving the empire for India has never before been explicitly explored but offers valuable insights not only into the possible mechanisms of trade with India but also into the wider question of the extent to which late antique and ancient legislation represented a theoretical or real state of affairs.

Under Byzantine law, the export of precious metals by private individuals was strictly prohibited and offenders faced serious consequences.<sup>596</sup> Though such prohibitions were clear, however, it is also apparent from surviving sources that the state made exceptions in the interests of policy. Multiple instances are recorded of large quantities of coined metal being moved beyond the borders of the empire as tribute or diplomatic gifts between the fourth and seventh centuries.<sup>597</sup> The implications of this legislation for interpretations of the evidence for long-distance trade and, in particular, state sponsorship of eastern trade, have not been sufficiently considered in previous studies of Indo-Roman and Indo-Byzantine exchange. Certainly, Late Antique legislation, promulgated and copied at times when trade with the east had been on-going for centuries and according to the most recent archaeological synthesis, summarised above, was at its Late Antique height, makes no exception regarding the export of currency for commerce in the east.

Export of specie is closely connected to fundraising for expeditions to India. The system of maritime loans, which bore very high interest rates but which the shipowner was under no obligation to repay if the vessel was lost through no fault of his own, thereby justifying the rate of interest charged by the lender, is well-documented for the Hellenistic period and Andreau argues on the basis of the Muziris Papyrus and the arguments of Church Fathers in favour of this particular case of high interest-bearing loans, that this system continued into the Roman period and beyond.<sup>598</sup> At the heart of this fundraising

---

<sup>596</sup> *Justinianic Codex* 4.41.2 '*Imperator Marcianus* . Nemo alienigenis barbaris cuiuscumque gentis ad hanc urbem sacratissimam sub legationis specie vel sub quocumque alio colore venientibus aut in diversis aliis civitatibus vel locis loricas et scuta et arcus sagittas et spathas et gladios vel alterius cuiuscumque generis arma audeat venumdare, nulla prorsus isdem tela , nihil penitus ferri vel facti iam vel adhuc infecti ab aliquo distrahatur. Perniciosum namque romano imperio et proditioni proximum est barbaros, quos indigere convenit, telis eos, ut validiores reddantur, instruere.'

<sup>597</sup> Hendy (1985) 261 details some of the substantial diplomatic payments made by the Empire in the sixth century alone.

<sup>598</sup> Andreau (1999) 54-5.

system was the securing of partners who would put forward a percentage of the cost of the enterprise. The group would then select agents to undertake the venture for them, if the person raising the funds was not himself the person planning the project. Other investors might also send along their own agents to help secure their investment. If the venture came to successful completion, having repaid the initial loan, the profits would be split in the same shares as the investments made.<sup>599</sup>

The legal terminology of such contracts has been studied extensively by Casson and Thür and they appear to have become common in the first to second centuries A.D. and can be traced in the textual record throughout the period under study and beyond, apparently being referenced indirectly in the *Ekloga* of Leo III, promulgated in A.D. 741.<sup>600</sup> The threats to sea voyages were both natural and man-made, including storms and bad weather, as well as piracy or lost cargo.<sup>601</sup> As a consequence, and as an early mechanism of insurance, maritime contracts usually specified that if the venture was a failure the primary investor was not required to repay his initial investors. Such a system, therefore, still required at least one, and often several people of significant personal wealth to generate an investment pot for an expedition to the east.

A second option for financing a trip was to borrow money directly from a banker. That bankers played an important role in at least some areas of the Late Antique economy is clearly suggested by the efforts of governments to regulate the application of interest to loans, in ways which, it has been argued, demonstrate governmental concern for long-

---

<sup>599</sup> The Muziris Papyrus (Vindob G 40822) refers to dealing with such an agent who was responsible for the safe arrival of goods at their destination.

<sup>600</sup> Casson (1990), Thür (1987, 1988); Gofas (2001) 1099, note 26.

<sup>601</sup> Seland (2009).

distance and high-value trade. Gofas shows that throughout the period *c.* 300-800 A.D. legal interest rates in the Roman-Byzantine Empire rose, though they remained modest. The currency reform of Constantine, which altered the relationship between the values of gold and silver coinage, resulted in a *de facto* rise in interest rates: interest was calculated against the value of silver, and these calculations were not altered as a result of currency reform, but a unit of silver was now worth less in relation to the gold coinage. Thus interest calculated on the basis of the silver coinage, particularly on large loans, could entail a significantly higher repayment on a loan. It is not clear, however, that this was an intended consequence of the reform, rather than a by-product.

Justinianic legislation of the mid sixth century, however, represents a more concerted effort to promote trade. While interest on loans was set at 6 % and only 4.2 % for the *illustres*, or wealthiest ranks in society, a higher rate was explicitly permitted to managers of commercial establishments, and a later provision granted this higher rate of interest (8 %) to bankers. The interest on maritime loans was even higher to reflect the risk, and in Novel 136 of A.D. 535 legislation set maritime interest rates at 12 %. In 540 this rate was increased to reflect rising prices of shipping and linked the interest payable to a voyage covered by a loan, regardless of the duration of the voyage.<sup>602</sup> The legislative response of the mid-sixth century government to the financing needs of traders is worthy of note. The debate over state involvement in long-distance commerce remains one of the major interpretative questions surrounding Indo-Roman, and by extension, Indo-Byzantine exchange. Though not conclusive evidence for state-sponsored trade, the legislative steps taken in the 530s-540s demonstrate a clearly intentional state response to the needs of

---

<sup>602</sup> Gofas (2001) 1095-1096.



long-distance trade. Further evidence for state promotion of trade in this period includes accounts of treaties with foreign powers and the employment of diplomacy to further trade interests, and the management of markets and taxes. Legislation most often concerned coinage regulation, but also attempted to control prices and regulate interest on loans, and shows an awareness of economic forces. In the *Digest of Justinian*, the comment is made that

Ideo in arbitrium iudicis refertur haec actio, quia scimus, quam varia sint pretia rerum per singulas civitates regionisque, maxime vini olei frumenti: pecuniarum quoque licet videatur una et eadem potestas ubique esse, tamem aliis locis facilius et levibus usuris inveniuntur, aliis difficiliter et gravibus usuris.<sup>603</sup>

The account by Prokopios, already referred to several times, of the embassy sent to the Aksumites and Himyarites also demonstrates the apparent coincidence of a political motive (to rally co-religionists of the Roman Empire as allies in its war with Persia) and an economic aim (to deny the Persians the profit from Roman purchases of Indian products).<sup>604</sup>

Beyond regulating interest rates, the state also concerned itself with regulating the role of bankers and money changers in more detail. In the *Book of the Eparch*, for example, those seeking to enter the guild of bankers are required to have honest men to vouch for them. A member was required to promise not to clip or cut coins, not to entrust his work to slaves and not to refuse coin of good alloy and appropriate design. Penalties for failing to comply with these regulations included flogging, shaving, confiscation of

---

<sup>603</sup> *Digest of Justinian* 13.4.3 'We know how prices of things vary from one city and region to another, especially of wine, oil, and corn. Even in the case of money, though it is supposed to have one and the same purchasing power everywhere, yet it can be quite easily raised and at low interest in some places, with difficulty and at steep interest in others.'

<sup>604</sup> Prokopios *History of the Wars*, Book 1, chapter 20.9-12. See note 322 (above, for full text and translation but for the present argument particularly the comments that Justinian called upon the Aksumites and Himyarites 'on account of their community of religion' and in order that the Romans 'be no longer compelled to pay over their money to their enemy'.

property and the amputation of a hand.<sup>605</sup> Though this text in its earliest manuscript form is dated *c.* 900, such regulation is likely to have been integral to late antique trading structures.<sup>606</sup> The penalties for and extent of legislation concerning money forgery also suggest the degree to which the state sought to exert control over the movement and release of money into the economy.<sup>607</sup>

The infrastructure for disbursing money into the late Roman-Byzantine economy remains one of the many poorly-understood practicalities of state monetary production. No Byzantine mint has ever been excavated, and written sources give few clues, except to suggest that the mint of Constantinople may have been located in the imperial palace.<sup>608</sup> The assessment of mint output in the pre-modern world is a subject of intense debate.<sup>609</sup> It seems clear that during the fourth to sixth centuries, the empire supported a highly monetized economy, in which even low-level transactions in urban environments were conducted using currency.<sup>610</sup> This required a significant volume of circulating currency. In the seventh century, owing to political and military crises, there was a dramatic reduction in the production of new coinage, though the empire continued to produce some currency.<sup>611</sup>

---

<sup>605</sup> *The Book of the Eparch*, 3.1-4

<sup>606</sup> Evans (2002) 52 on the dating of the *Book of the Eparch* and the similarity of attitudes between the tenth century and the sixth.

<sup>607</sup> Justinian, *Body of Civil Law, Codex* Book 9.24.

<sup>608</sup> Bellinger and Grierson (1999) 128 though this is only recorded from the eleventh century.

<sup>609</sup> Banaji (2006) 271 laments in the case of Byzantine monetary history the 'lack of the kind of numismatic work that alone can yield reliable estimates of the scale on which individual mints, and Constantinople in particular, struck gold at various times in the later fourth to seventh centuries'. This demonstrates a misunderstanding of the 'reliable' possibilities of numismatic research. Buttrey (1993) discusses in detail the difficulties facing an accurate calculation of ancient Roman coinage, despite the far greater data sample available and concludes that attempts to quantify coin output are not only futile but detrimental to scholarship due to the rapidity with which such calculations, owing to their complexity, are accorded a pseudo-scientific robustness and proliferated throughout wider literature, regardless of the researcher's efforts to couch his/her conclusions in terms of the limitations of the evidence.

<sup>610</sup> Morrisson (2001) 212.

<sup>611</sup> Morrisson (2001) 928-34.

The location and operational dates of imperial mints are also a matter of fairly secure historical record.<sup>612</sup> Though minting activity was dispersed throughout the Empire to varying degrees between the fourth and seventh centuries, the two most significant mints for the purposes of this study were Constantinople and Thessaloniki. These were the only two mints which issued significant quantities of gold coinage. Indeed, from the late fourth century onwards, all Byzantine gold coins bore the mintmark CONOB (*constantinopoli obryziacus* = fine gold of Constantinople), regardless of actual minting location.<sup>613</sup> The state's control of the precious metal resources required to produce a fine and highly controlled currency is fairly well-understood, at least in theory.<sup>614</sup> Legal sources regulate private access to gold bullion and forgery was subject to extremely severe punishment by the state. Failure to accept imperial currency was also prohibited, demonstrating that the state had some interest in maintaining regularized circulation of currency.<sup>615</sup>

The legislative evidence for the Byzantine state's control over currency has never been closely considered with respect to long-distance trade. This oversight demonstrates the need for further consideration of the state's active interest in (or theoretical understanding of) promoting long-distance trade beyond the empire's borders. It remains unclear from the evidence cited above that there was ever an explicit policy by the state to encourage trade with the east, though it seems plausible that recognition of the tax revenues derived from the Red Sea ports (which were levied upon goods not only from

---

<sup>612</sup> Grierson (1999) 4-6.

<sup>613</sup> Hendy (1985) 400.

<sup>614</sup> Morrisson (2001) 911.

<sup>615</sup> Morrisson (2001) 205; The Theodosian Code 9.21.2-6 cites among the penalties for various levels of involvement in counterfeiting coins torture and confiscation of property. Forgery of coins was considered to be an act of high treason (9.21.9).

India but presumably also on the incoming mineral resources from east Africa) disinclined the government from passing or enforcing legislation actively detrimental to that trade. It also seems clear from the writings of Pliny, for example, who openly laments the moral and economic but not the legal evil of Rome's trade with India, that a comparison of the visible economic reality that specie left the empire for India through well-recognised ports with the legal prohibitions against such movement has ramifications for the larger discussion of the degree to which Roman law was intended to be entirely prescriptive or in some capacity descriptive of an ideal reality (in this case, an autarchic state).<sup>616</sup> The numismatic evidence for Persian involvement in the northern (landward) and southern (maritime) routes east would benefit enormously from such a foundation in state legislation and broader economic discussion but the absence of that context is illustrative of the more general imbalance of evidence in trying to reconstruct the inter-related and comparative roles of the Red Sea and the Persian Gulf in trade with India.

## 6.5 Conclusion

It seems clear from the literary and archaeological evidence that the Red Sea was primarily a transit location and may have received many more visitors from the east than has been reflected in previous scholarship, though it should be borne in mind that evidence for such visitors declines sharply from the second century A.D. The possibility of increased movement from east to west, whether from India to the Red Sea or to an intermediate point, possibly in the Persian Gulf, is important not only for an understanding of Indo-Byzantine exchange generally but also for understanding the coin finds in south

---

<sup>616</sup> Lopez, Raymond and Remie Constable (2001) xvii.

India. The question of how far distribution maps reveal patterns of initial movement by coins from the Mediterranean to India has already been discussed in chapter five, but the evidence for Indian traders in the Red Sea and Persian Gulf must add the further caution that any or all Roman and Byzantine coins found in India may not have been brought there by people originating in the Roman or Byzantine state. Their entire pattern of movement and distribution therefore may reflect entirely Indian prerogatives and interests.

Another feature which emerges from this survey of the literary and archaeological sources for the roles of the Red Sea and Persian Gulf in trade with India in the fourth to seventh centuries is that the Persian Gulf may plausibly have been the nodal point at which traders from east and west met and exchanged goods. This seems more likely based on a re-examination of the literary sources but cannot currently be verified through archaeological excavation. The lack of Persian coins and the poorly articulated understanding of the wider Persia economy remain two of the biggest stumbling blocks in building up a detailed picture of Indo-Roman/Indo-Byzantine trade. The south Arabian coast has also been proposed as an alternative meeting point at which goods may have been exchanged and transferred from maritime routes connecting the Red Sea and south India and from land routes from Mesopotamia and into the Persian Gulf. The best evidence for such south Arabian involvement is currently analysis of the ceramic finds at ed-Dur, which reveal goods both from southern Mesopotamia, from the Roman Mediterranean world and, possibly, from south India. Nevertheless, the ceramic finds also testify to a fairly limited chronological window of activity (first century B.C. to first century A.D.). Outside this timeframe, either ceramics, which do not seem to have been a commodity in

ed-Dur, but rather a durable trace of networks moving other products, stopped being transported, or other locations took over as exchange points for goods.<sup>617</sup>

Based on a combination of coin finds, textual sources and archaeological excavation, though admittedly building much of the argument for the role of the Sasanian empire from the lack of expected evidence rather than from positive indications of activity, it is therefore possible to outline a geographically and chronologically shifting interaction of the Red Sea and the Persian Gulf with each other and with south India between the first and seventh centuries A.D. The first and second centuries appear to have seen the largest volume of activity along the maritime routes between the Red Sea and south India. While it is likely that some merchants moved along all or parts of this route from various destinations, it is in this period that the best case can be made that Indian merchants played, if not the most significant part in trade, then a far more significant role than has been accorded to them. The finds at ed-Dur demonstrate that the southern Arabian Peninsula may have served as a point at which goods from east and west were transferred and exchanged, so that not all journeys need have been direct. Some goods from Mesopotamia also seem to have entered the trading sphere via the Persian Gulf, too but it is impossible to speculate about their volume. The third century appears to have witnessed a real decline in the volume of trade. From the fourth century to the seventh there is little evidence for Indian traders in the Red Sea and southern Arabia, but there is also more limited (though not insignificant) Roman-Byzantine numismatic material in India and the textual sources which in the earlier period seem to suggest a very diverse trading milieu, albeit with an emphasis hitherto unrecognised on traders moving west, now emphasise the

---

<sup>617</sup> Rutten (2007).

dominant role of the Sasanian empire in Indian commerce. These sources do not, however, definitively indicate that Persians moved east, as opposed to receiving goods brought by eastern merchants. The *Christian Topography* does speak of Sasanian merchants in Sri Lanka but, as discussed above, the account is possibly a modification of a Plinian tale, used to convey a moral argument, and it receives no support from Lankan material evidence. Combined with the absence of Sasanian coin finds from India, it is likely, though it cannot be demonstrated without considerable expansion of archaeological work along the shores of the Persian Gulf, that the Sasanian Empire increasingly dominated trade passing along the east-west maritime routes by acting as a middle ground to which merchants from both directions came to exchange goods, possibly using primarily a barter system, or using Roman gold coins as the medium of monetary exchange.

## CHAPTER SEVEN: INDIA IN INDO-BYZANTINE EXCHANGE

### 7.1 Introduction

The new archaeological evidence for trade along the coasts of the Red Sea and Persian Gulf provides vital clues to personnel, infrastructure and chronology of trade with India. The significance and impact of trade with the Mediterranean within south India is far harder to gauge and chapter five illustrated the limitations of numismatic evidence for reconstructing commercial history, emphasising instead the value of coin finds for elucidating internal social and economic forces. As in the case of the Red Sea, and to a lesser extent, the Persian Gulf, however, recent archaeological developments provide new avenues of inquiry into local networks of exchange and use. Despite the assertion within Indo-Roman scholarship that trade with the Roman Empire (however unquantifiable it is conceded to be) must have had a significant impact at least on areas of coastal south India, both scale and effect are difficult to establish for either the first to third centuries or the fourth to seventh.<sup>618</sup> The changing value and meaning of coins explored in chapter five weakens arguments made in earlier literature that coins represent an objective, quantifiable alternative to subjective written accounts such as Pliny's lament about the 100 million sesterces expended each year on Indian goods. Beyond the numismatic evidence, historians of Indo-Roman trade have turned to archaeology, especially at sites often termed 'Indo-Roman trading ports' on the south Indian coast. Sub-continental literary sources, especially in Tamil, have also been used, perhaps with undue confidence, to provide texture and support to narratives largely derived (as previous chapters demonstrate) from

---

<sup>618</sup> Whitehouse (1991) 217-18 described the Roman trading network in the Indian Ocean as one of three '*massive*' networks known in the region before c. A.D. 1000 though makes the point that interpretations of Indo-Roman trade need to be careful not to over-estimate Roman dominance in these networks.



Mediterranean sources and a particular reading of archaeological and numismatic material. For the purposes of constructing a narrative of Indo-Byzantine exchange and supplementing the data derived from the numismatic evidence, this chapter will examine the value and testimony of the Tamil *Cankam* literature and will survey the archaeological evidence of the 'Indo-Roman port sites'.

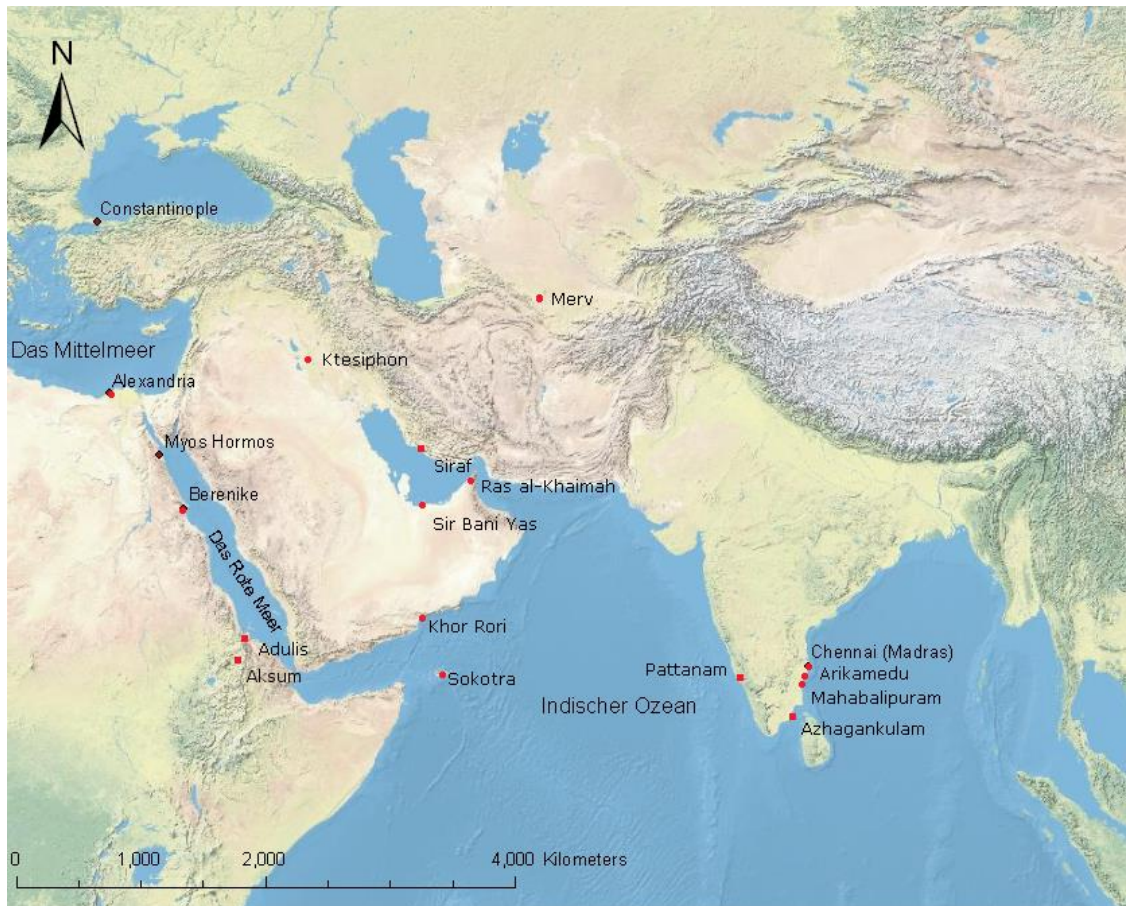
## 7.2 South India in the fourth to seventh centuries

One immediate difficulty which faces any effort to piece together Indian evidence for trade with the Mediterranean via the Red Sea is the paucity of historical data concerning south Indian society in the fourth to seventh centuries (and one might also plausibly argue, the first to third centuries). It is striking, for example, that Nilakanta Sastri's *History of South India*, first published in 1952 with the stated aim of redressing the balance in Indian historical writing, which had up to that point favoured north Indian subjects, remains one of the standard works on the early history of peninsular south India. Of the fourth to seventh centuries he writes that '[a]fter the close of the Sangam epoch, from about A.D. 300 to A.D. 600, there is an almost total lack of information regarding occurrences in the Tamil land'.<sup>619</sup> Though some important studies on the development of south Indian society and economy in this period have reshaped elements of interpretation, this remains a valid summary of much of the present state of knowledge.<sup>620</sup>

---

<sup>619</sup> Nilakanta Sastri (1958) 3. In the period here concerned, the Tamil lands would have included the modern federal states of Tamil Nadu and Kerala (as Malayalam had not yet emerged as a separate Dravidian language), and substantial areas in the south of Andhra Pradesh and Karnataka. Given the distribution of Roman coin finds in particular, the Tamil lands may often in modern scholarship be intended as a synonym for the area of India engaged in maritime trade with the west, though this view is undoubtedly too simple, as evidence of coin finds from northern India will demonstrate.

<sup>620</sup> Champakalakshmi (1981, 1987), Gurukkal (1993), Heitzman (1987), Mahalingam (1967, 1976), Maloney (1970), Mines (1984), Narayanan (1988), Ramaswamy (2004), Sharma (1988), Stein (1975, 1980).



**Fig. 7.1:** Map of south India with key sites marked.

Archaeological investigation has focussed most heavily on monumental, elite sites such as Kanchipuram and Gangaikondacholapuram.<sup>621</sup> While these have produced important insights into religious observance, art history, architecture and royal life, and have undoubtedly served the twin purpose of putting south Indian sites onto tourist and heritage maps, they reveal far less about the life of the majority of the population than other settlement sites might.<sup>622</sup> An exception to this emphasis on elite sites in the early

<sup>621</sup> Archaeological Survey of India (ASI) website (consulted 02/2010).

<sup>622</sup> The connection between the work of the ASI and tourism is made clear in the section of the ASI website devoted to publications. The article from *The Hindu (Mysore)* 15<sup>th</sup> February 2013 entitled 'Seminar on archaeological, cultural tourism from February 15' demonstrates the wider interest in India in the development of India's archaeological heritage as a tourist resource.

historical period is the focus on commercial sites and coastal ports, largely as a result of interest in Indo-Roman trade. Sites such as Kaveripattinam have, for example, been excavated over several seasons.<sup>623</sup> Almost all sites of both categories in south India also suffer from the fact that secure dating of archaeological contexts is almost impossible. With the limited size of local coin series and the lack of minting dates on these coins, verifiable royal chronologies, or in many cases, closely worked ceramic typologies, it is not uncommon for sites or layers within sites to be dated only to the ancient or pre-historic period, meaning the first six centuries A.D., with no further specificity possible.<sup>624</sup> Even where datable contexts are provided, the reliance of those dating systems on the presence of Roman material or on the *Cankam* epic poetry, the dating of which is discussed in more detail below, makes the distinction between pre- and post-fourth-century evidence difficult to rely upon. For example, Selvakumar, Shajan and Tomber explain the general dating of south Indian archaeology thus:

In ancient Tamil country (which includes the modern states of Tamil Nadu and Kerala), the beginning of the Early Historic period is placed at around the 3rd century BC based on the reference to the Tamil kingdoms in the 2nd and 13th Asokan rock edicts inscriptions. The Early Historic period can be divided into three phases – Phase I (pre-1st century BC), Phase II (1st century BC to 3rd C A.D) coinciding with early ‘Indo-Roman’ or Indian Ocean trade, and Phase III (post-3rd century to AD 500) the post-Sangam Age.<sup>625</sup>

Furthermore, while all historical inquiry is in some sense political, political concerns are more explicit and run closer to the surface in much of the historiography of south India than in other regions of the world: the rise of south Indian history, and the history of Tamil-speaking people in particular, in the twentieth century was in a clear

---

<sup>623</sup> ASI website.

<sup>624</sup> Bajpai (1992) 81 demonstrates at the site of Eran in Madhya Pradesh the impossibility of narrowing dating of Phase III at the site beyond 1<sup>st</sup>-6<sup>th</sup> centuries A.D.

<sup>625</sup> Selvakumar, Shajan and Tomber (2009) 34.

context of cultural assertion. It emerged from the sense that an important part of the history and culture of India had been ignored in favour of the ostensibly more internationally relevant and certainly better attested history of the north. This feeling intensified after Indian Independence, when so much of the modern narrative of the new Indian state emphasised the struggles and hardships of Partition in 1947-8 and the related sectarian rivalries which continue to exist between Hindus, Muslims and Sikhs in northern India.<sup>626</sup> In the field of pre-modern history, too, an emerging awareness of the antiquity and sophistication of the Harappan civilization of the Indus valley, which thrived in the second millennium B.C., focused attention on the north.<sup>627</sup>

While the desire to re-assert the role of India in history generally, and south Indian history specifically may have been legitimate, its results are often unhelpful for two significant reasons. First, historical writing can often exhibit a brand of cultural nationalism, with parallels in the conflicts dividing modern Sri Lanka, which at times resembles eulogy or polemic more closely than the historical genre. This phenomenon, which might be termed 'Dravidian nationalist history' implies or states that once Dravidian civilization spread throughout India, and even as far as Madagascar and Java prior to invasions by other linguistic groups and decimation by natural disasters.<sup>628</sup> Dravidian languages constitute the non-Indo-European language family of which Tamil is the oldest recorded example (but which also includes the south Indian languages Kannada, Telugu and Malayalam and a number of other languages with very small numbers of speakers),

---

<sup>626</sup> Metcalf and Metcalf (2006) demonstrate the tendency for the dominant narrative of modern Indian history to focus on the events of the north, beginning with the Mughal era, and tracing the development of an Indian state around Delhi. This study does not suggest that sectarian divides, and especially, anti-Islamic feeling and rhetoric are absent in south India, only that they are not perceived to be the defining axes of south Indian culture or history.

<sup>627</sup> For an overview of work on the Harappan civilization of the Indus Valley see Possehl (1993).

<sup>628</sup> Paramasivanandam (1960) 20.

and which are today spoken as majority languages in peninsular India.<sup>629</sup> This theory assumes, in keeping with nineteenth-century European ideologies of linguistic cultural groups or Völker, that an identifiable Dravidian language necessarily required the existence of a culture equally recognisable and distinguishable from an equivalent north Indian ‘Indo-European’ culture and internally homogeneous enough to constitute a defined group. This ‘Dravidian culture’ is in turn placed at the beginning of Indian history, on occasion amid claims that the Harappan civilization of the second millennium B.C. was Dravidian (although its language has not been identified).<sup>630</sup> This Dravidian nationalist history in its most extreme manifestations even places the Dravidian civilization as the birthplace of humankind.<sup>631</sup> Paramasivanandam, for example, offers a particularly explicit example of Dravidian nationalist history in his *Tamilnad through the ages* (1960). In this he cites frequently and implies support for the theory of the lost Lemuria ‘or the oldest Tamil country which disappeared later because of upheavals’, whence humanity emerged before the seas covered it.<sup>632</sup>

In particular, ‘Dravidian nationalism’ sets itself up in opposition to the supposedly ‘Aryanised’ or ‘Sanskritised’ history of the north, which from the nineteenth century was structured around the theory that around the second or early first millennium B.C. an Indo-European speaking group (or more probably many Indo-European migrant groups), the so-called Aryans, arrived in northern India bringing new technologies such as horse-drawn chariots, and probably new cultural and religious traditions. The dominant languages of northern India being Indo-European this historical migration was linked to the identity of

---

<sup>629</sup> Steever (1998) for an examination of the major and minor Dravidian languages.

<sup>630</sup> Possehl (1996) and Mahadevan (2002) provide the best survey of recent research and the inconclusive results which remain its output.

<sup>631</sup> Paramasivanandam (1960) 16.

<sup>632</sup> Paramasivandandam (1960) 27.

contemporary speakers of Indo-European languages, and the development of Vedic Hinduism has been attributed to Aryan influence.<sup>633</sup> The question of the nature of Aryan settlement in India, however, is the focus of Dravidian revisionism. According to the Dravidian nationalist historians, the Aryans destroyed or evicted the native Dravidian population and enforced their own religious practices and beliefs. This left only the comparatively inaccessible south, to retain the language, culture and religion of the “true” Indian past, until early in the first millennium A.D., when the now syncretised Indo-Aryan culture of the north began to assert itself in the south, bringing Sanskrit poetry and Vedic Hindu practices.<sup>634</sup> There is, however, little evidence to support the Dravidian claim that these cultural developments, or the earlier migrations into northern India, were violent, and dating them is almost impossible. Furthermore, the extent to which modern or historically recorded Tamil culture represents a historically unchanged society, or simply another dynamic hybridisation, is also subject to debate. Above all, while the culture of contemporary south India is distinctive from that of north India and its distinctiveness correlates to the language spoken, what significance this has for understanding the shifting political, social and economic realities of historical (south) India is entirely unclear but frequently forms the basis for a distortion of fact and interpretation.<sup>635</sup> Such distorted historical writing in turn can form the basis for identity politics and social distinction in modern contexts.<sup>636</sup>

---

<sup>633</sup> Thapar (1996) examines chronologically the rise of the theory of the Aryan/Indo-European invasion, and its European scholarly context, and explores the impact of the ‘Aryan controversy’ in modern Indian historical and political discourse.

<sup>634</sup> Thapar (1996) explores the way in which an assumed history of invasion has affected subsequent scholarship. Dutt (1925) for a traditional account of the ‘Aryanisation’ of India.

<sup>635</sup> For an analysis of the development of theories of Aryanism in India, and the evidence to support these theories see Thapar (1996). For an examination of the growth of Tamil purism and its connections to Tamil perceptions of cultural purity see Kailasapathy (1979).

<sup>636</sup> Both of the leading political parties in Tamil Nadu, for example, the DMK (Dravida Munnetra Kazhagam) and the AIADMK (All India Anna Dravida Munnetra Kazhagam) promote themselves using the Dravidian platform. While the AIADMK has moved away from explicitly ethnic/linguistic politics, they

A second problematic symptom of the close link between political agenda and historical writing in modern south India (and closely linked to Dravidian nationalism) is a variety of historical nostalgia which claims, usually on the basis of the south having preserved the Dravidian *Urkultur* of the Indian soul, that the social history of south India was one of peaceful bliss and harmony. This is claimed most fervently on the basis of the *Cankam* epics, which for Dravidian nationalists are a combination of revealed truth and absolute historical learning. These speak of divisions of society (in Tamil, திணை - *thinai*) which categorised people according to the geography of the region in which they lived. Each *thinai* referred to both a region and also a socio-ecological cultural group with its own hobbies, sources of plenty and specific beliefs and practices. The effusive expansion of this idyllic past can at times reach impressive levels of hyperbole:

"*Kurinji*" refers to the hilly region and it was the home of hunters who roamed on the mountains...They spent their life joyously, looking after the "*thinai*", fields, and sporting in the mountain springs, chasing the games, dancing and singing on festive occasions (*Kunrakkuravai*) and worshipping Lord Muruga (*Velan Veriyadal*)... "*Mullai*" is pastoral land. It was the home of herdsmen (*kovalar*). Prospering in the arcadia of pasture lands, dotted with orchards here and there, they lived happily taking plenty of milk and curd, and offering them generously to their guests... "*Muratham*" means the fertile region which was the home of the agricultural tribes. It is the farmers and peasants of ancient Tamil Nad who first realised the value of settled and corporate living... "*Neythal*" or the maritime region was the home of the traders and fishermen... "*Palai*" refers to the sandy waste or the desert and the life of the people who lived in this region also finds a place in Tamil literature. We get to know particularly of their ways of worshipping their deities by means of songs...

It is interesting to note that the lives of the people in the five different regions differed according to the natural surroundings. Besides, there was a time when Tamil Nad spread far and wide from Madagascar to the west and Java to the east; but this wide stretch of land was destroyed by a huge tidal wave as a result of which we find references in ancient literature to places like *Pumpuhar* and *Kapadapuram*, which do not exist today.<sup>637</sup>

---

remain central to the identity of the DMK, reflected in current advertising material, including a Facebook page.

<sup>637</sup> Paramasivanandam (1960) 18-20.

A consequence of these politicised biases within south Indian historiography has been that most reputable historians have until recently eschewed the question of social history altogether, focussing instead upon the difficulties still surrounding a stable chronology and the reconciliation of conflicting temporal markers in different source materials.<sup>638</sup> Providing any narrative within which to contextualise evidence for long-distance trade is, therefore, complex and cannot be separated from a close analysis of the surviving source material, especially the Tamil *Cankam* poetry. What emerges from an examination of epigraphic, written and archaeological sources is that south India in the first seven centuries A.D. was ruled by a large number of overlapping kings or chiefs, of which the most significant political or familial conglomerations were the Cholas, Pandyas and Cheras. Extensive king lists for these polities have been constructed on the basis of genealogies carved in stone and guesswork concerning the precise relationships or reign lengths alluded to. In all cases the lack of any absolute chronological anchors is a particular problem. While dynastic succession remains clouded by uncertainty, though, the structure of these kingdoms can be inferred from a variety of sources. All of these polities seem to have been tribute-gathering kingships founded upon warfare and conquest, in which a wealthy elite surrounding the royal court possessed sufficient disposable wealth to endow and otherwise patronise religious orders, commission buildings and images and acquire luxury consumables.<sup>639</sup> Kingship is presumed to have been hereditary, though an

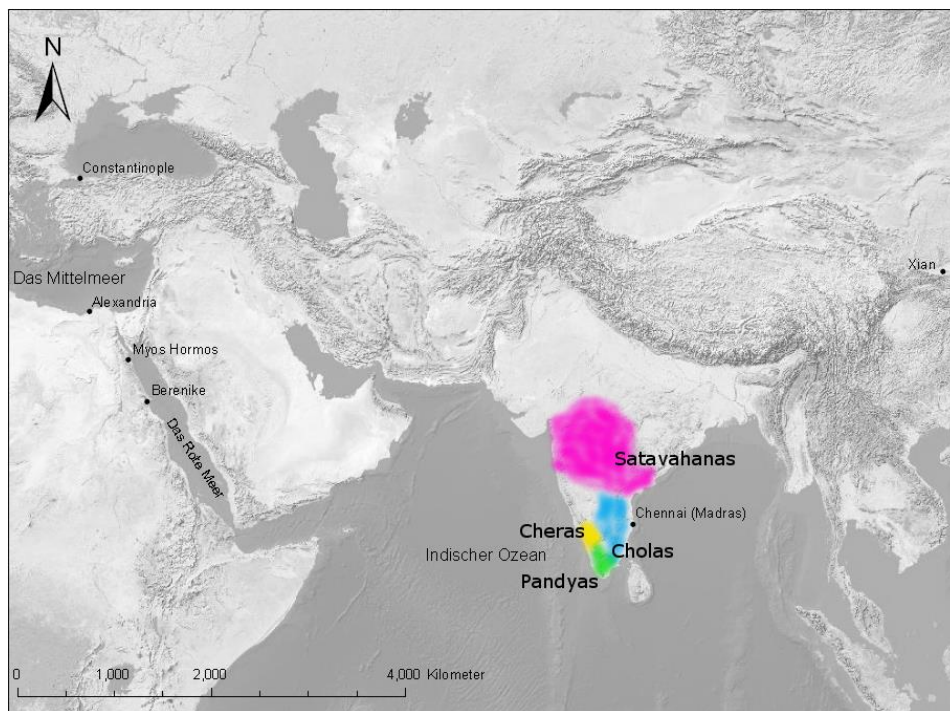
---

<sup>638</sup> For an important exception to this tendency see Narayanan (1988).

<sup>639</sup> Sridhar and Marxia Gandhi (2006) 4-5, for example, records a 5<sup>th</sup>-century inscription recording the building of a temple by a royal general. 229 records the cutting of a rock-cut cave temple by a seventh-century monarch. The carvings at Mahabalipuram, though predominantly of seventh- and eighth-century date (Lockwood, Siromoney and Dayanandan (1974)) and the magnificent bronzes from Amaravati (Barrett (1954), also the discovery site of a major hoard of Indian silver punch-marked coins (Gupta (1963) and Raja Reddy, Acharyulu and Kamakshaiah (2007)) are among the most striking examples of the disposable wealth available to elites in south India.



important critique of the way in which royal genealogies have been constructed is presented by Henige in *Some Phantom dynasties of early and medieval India*.<sup>640</sup> Nevertheless, kings appear to have been selected from among males, often with similar given or chosen titles and names, suggesting at least a notional preference for dynastic rule.



**Fig. 7.2:** Map of south India c. first to fourth centuries A.D.

This is almost all that can be said of the history of southern peninsular India, but the Deccan provides a somewhat clearer picture. In the first centuries A.D. the region was ruled by the Satavahanas up to the late second and third centuries when wars with the Sakas of the north seem to have led to the decline and collapse of the Satavahana dynasty. By the late third century little remained of their empire. Socially it appears that in this

<sup>640</sup> Henige (1975).

period Hinduism and Buddhism were the dominant and competing religions, though Jains and *Yavanas* (foreigners of perceived western origin – see below for further discussion) of unspecified faith are recorded, and were at times incorporated into social systems.<sup>641</sup> Though it would ultimately vanish from the south of the Indian subcontinent, Buddhism remained successful throughout the period under study and the first and second centuries A.D. witnessed the most substantial and admired period of *stupa*- and temple-building in the south, as well as a flowering of Buddhist scholarship and literature.<sup>642</sup>

For the purposes of examining foreign trade, the Satavahanas flourished at the same time as the richest period of Roman interaction with India. The *Geography* of Ptolemy includes named ports, which are likely to have contributed to the wealth and success of the Satavahana state, including Ariake of the Sedanoi and Kamane.<sup>643</sup> Cloth seems to have been a major industry of export and import and one well-studied aspect of this period of south Indian history is the sophisticated system of guilds which operated within trading communities, and which has been reconstructed primarily on the basis of epigraphic records of donations to religious establishments.<sup>644</sup> Most significantly, these guilds appear to have operated a regulated system of credit, with clear implications for the growth of trade. Infrastructure, however, was less well developed and there is little

---

<sup>641</sup> Aravamuthan (1925) 1-2 on the competing positions of Buddhism and Hinduism. Sridhar and Marxia Gandhi (2006) 103-8 demonstrates the presence and resources of Jains in south India, who were clearly able to support monasteries and pay for artisans to record the most noteworthy feats of self-denial achieved by ascetics in the community.

<sup>642</sup> The prominent place of south India in accounts by Chinese pilgrims and the Buddhist sites they visited in the south of the subcontinent demonstrate the continued significance of Buddhism and wider Buddhist links throughout this period. In particular the accounts of Xuanzang (Beal (1884)), Faxian (Legge (1886)) and Yijing (Lahiri (1986)).

<sup>643</sup> Ptolemy *Geography* Book 7.6 and 7.5.

<sup>644</sup> Ray (1986) on the structure of guilds, their relationship to religious structures and their role in wider Satavahana commerce. 50-89 discusses the development of Satavahana settlements and from 70, the importance of rock-cut caves outside most major urban centres, which seem to have housed Buddhist communities central to the organization and economic life of the empire.

evidence of a road network to link coast and interior, raising questions about the dissemination of wealth from trade beyond the royal courts and monastic centres. By the fourth century, the Satavahanas had been replaced by a division of six monarchies and parts of the southernmost region of the peninsula come briefly into better focus. The most significant of these dynasties for the period studied here was that of the Pallavas, which established itself in the south east with its capital at Kanchipuram.<sup>645</sup>

In modern Madhya Pradesh the Vakatakas rose to prominence during the fourth and fifth centuries, and significant events in their history include the annihilation of the Buddhists and *Yavanas* under the *yuvuraja* or heir to the throne, Gautamiputra.<sup>646</sup> Another ruling house of significance was that of the Kadambas, which rose to prominence in the fourth century as a result of a temporary weakening of the Pallava dynasty, and between these two kingdoms rose the Gangas around the area of Mysore.<sup>647</sup> Throughout the period of this study, across all kingdoms, the underlying form of government was autocratic monarchy, with inheritance in the male line.<sup>648</sup> It seems likely that each monarchy kept a professional army, probably including infantry, cavalry, chariots and elephants. Substantial taxes must, therefore, have been required to sustain such forces, though the structure of these exactions and their level of systematisation remain unknown.

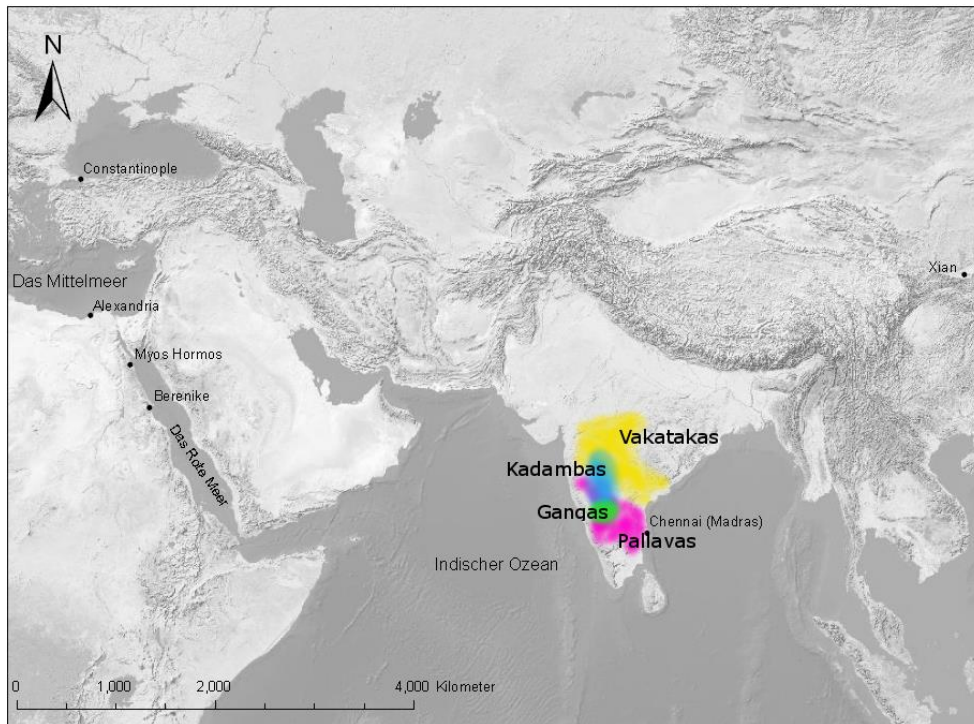
---

<sup>645</sup> Nilakanta Sastri (1976) 100-114 outlines the successor states of the Satavahanas.

<sup>646</sup> Nilakanta Sastri (1976) 95.

<sup>647</sup> On the Kadambas, Gopal and Tharanatha (1996). On the Gangas, Sheikh (1976).

<sup>648</sup> Nilakanta Sastri (1976) 109-11 for dynastic genealogies tracing kingship in the male line.



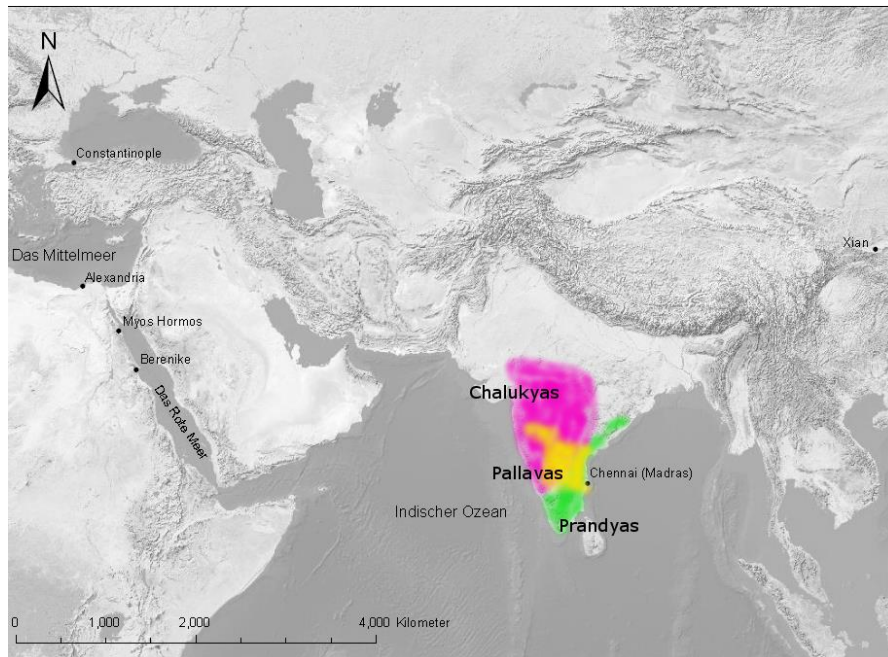
**Fig. 7.3:** *Prominent dynasties of south India after the fall of the Satavahanas (c. A.D. 300-600). Borders are necessarily fuzzy and overlapping, reflecting both geographical uncertainty and change over time.*

Beyond these hints at social organisation little is known between the end of the second century A.D. and the end of the sixth century. At this point, narratives speak of a threat faced by South India generally, in the form of the Kalabhras, a dynasty of rulers described in Buddhist sources as evil foreigners, who appear to have caused great disruption to the kingdoms of the south, though Sharma presents a possible reinterpretation of their role as an example of peasant protest within a hierarchical and aristocratic society.<sup>649</sup> This period of historiographical darkness, however, was also one of significance for the development of Buddhism and Jainism in the south and is one of the periods considered to have witnessed a flowering of Tamil literature.<sup>650</sup>

<sup>649</sup> Sharma (1988) 9

<sup>650</sup> Nilakanta Sastri (1976) 3.

According to Nilakanta Sastri, what follows for three hundred years from the end of the sixth century ‘is virtually the story of mutual conflict among three powers each seeking constantly to extend its empire at the expense of its neighbours’.<sup>651</sup> These three powers were the victors over the Kalabhras: the Chalukyas, based at Badami, the Pallavas with their capital at Kanchi, and the Pandyas of Madura. As Nilakanta Sastri rightly observes, however, ‘[p]olitical conflict was...no obstacle to cultural growth’.<sup>652</sup> This was a period of Hindu revival and witnessed developments in sculpture, painting and music.



**Fig. 7.4:** Major states after the fall of the Kalabhras (c. A.D. 650-). See Fig. 7.3 for caveats with respect to overlapping boundaries and change over time.

<sup>651</sup> Nilakanta Sastri (1958) 141.

<sup>652</sup> Nilakanta Sastri (1958) 142.

### 7.3 The *Cankam* literature: of *Yavanas* and chronology

The above sketch of south Indian political and social history in the first centuries A.D. differs significantly from other scholarly and popular accounts by the absence of a body of source material which plays a significant role in south Indian historiography and cultural identity. The classical literature of south India, written in Tamil and frequently referred to as *Cankam* literature (from the Tamil சங்கம் = college/association/academy), dates from some point in the first millennium A.D. The debate over its chronology and purpose is substantial and unresolved, but this has not prevented the deployment of *Cankam* textual excerpts in support of arguments about Indo-Roman trade, the political organisation of south India in the period under discussion, and even in reconstructions of historical narrative based entirely on the accounts within these works.<sup>653</sup> It is, therefore, necessary to examine this body of source material in detail and offer some reflections on its possible date, suggested by a focus on Indo-Byzantine exchange.

The *Cankam* poems primarily deal with the dichotomy between urban and rural lifestyles in south India, structuring lengthy epic and descriptive poems around love stories and religious morality tales.<sup>654</sup> Amidst these descriptions, however, are accounts of city life, including foreigners, whose presence is frequently cited in support of the presence of Roman traders in India.<sup>655</sup> The texts appear to have been written in their surviving form over a number of centuries and the most widely accepted date for their production regards

---

<sup>653</sup> Accounts of Indo-Roman trade supported by reference to *Cankam* literature: De Romanis (1997) 106, Kandaswamy (1984) 41, Raman (1991) 125, 129, 130, Suresh (2004) 23, Thapar (1997) 17. Accounts of south Indian history supported by reference to *Cankam* literature: Aravamuthan (1925), Maloney (1970) 615, Nagaswamy (2006), Narayanan (1988) 21, 27, Paramasivanandam (1960) 12-20, Pillai (1932), Sarma (1978) 414, Shastri (1992) 126.

<sup>654</sup> Zvelebil (1992).

<sup>655</sup> For example, Suresh (2004) 23, Nilakanta Sastri (1958) 134, Radhakrishnan (1996b) 117.

the earliest anthologies as having been compiled in the first two centuries A.D. with some later poems and collections recorded gradually down to the fifth century.<sup>656</sup> They are thus perceived to be contemporaneous with Indo-Roman trade and have often been deployed accordingly to enhance histories of this trade. Even if the most widely used dates are accepted, however, the relevance of these poems for understanding Indo-Roman trade is still uncertain, as Ray has partially demonstrated.<sup>657</sup>

In particular, the most relevant, but also potentially problematic, element of the so-called Tamil *Cankam* literature for a study of Indo-Roman trade is reference to people referred to as *Yavanas*. These people are clearly represented as being foreign to the south Indian, Dravidian-speaking milieu within which the poems are set. They are depicted as arriving by sea and trading pepper:

யவனர் தந்த வினைமாண் நன்கலம் பொன்னோடு வந்து கறியொடு  
பெரும்.<sup>658</sup>

They were also associated with a variety of skills, such as making beautiful lamps:

யவனர் இயற்றிய வினைமாண் பாவை கை ஏந்தும் ஐ அகல் நிறைய  
நெய் சொரிந்து.<sup>659</sup>

*Mullaippattu* refers to the strange dress of *Yavanas* and their employment as bodyguards of Indian kings:

<sup>656</sup> Thapar (1997) acknowledges the contention over dating the Tamil texts (discussed in more detail below) but is more explicit than most historians in conceding that the dating she uses of the first couple of centuries A.D. most often wins by virtue of democratic majority rather than compelling scholarly coherence: 'The date of the composition and later compilation of these poems has been controversial but a period just prior to the Christian era and continuing for a couple of centuries would be acceptable to most.' (17).

<sup>657</sup> Ray (1988).

<sup>658</sup> *Ahanannuru* 149. 'Ships of the *Yavanas* came with gold and went back carrying pepper'.

<sup>659</sup> *Nedunavadai* 101-2 'Skilfully made lamps created by *Yavanas* in the shape of female figures, holding ghee in their beautiful, lifted, supped hands were lit with up-lifted, thick wicks topped by golden flame'.

மன்னன் இருப்பிடத்தில் யவனர், மத்திகை வளைஇய மறிந்து வீங்கு  
செறிவுடை, மெய்ப்பை புக்க வெருவரும் தோற்றத்து, வலி புணர் யாக்கை  
வன் கண் யவனர், புலித் தொடர் விட்ட புனை மான் நல் இல், திரு மணி  
விளக்கம் காட்டி.<sup>660</sup>

*Yavanas* are also described as consuming wine.<sup>661</sup> *Yavanas* also appear in epigraphic records in central and western, though not south, India. In this case, individuals and groups self-identifying as *Yavanas* made donations to Buddhist monasteries.<sup>662</sup> In most literature on Indo-Roman trade, *Yavanas* are casually interpreted as Romans. The quotations dealing with them are routinely reproduced in studies of Indo-Roman trade, and these excerpts were used extensively in the 2011 exhibition of Roman coins in the Madras Government Museum.<sup>663</sup>

The term *Yavana* originated in north India in the third century B.C. and appears to refer in that context to Greeks (Ionians) who came to India during and after Alexander's campaigns in the east. It then continued as a term for groups who were perceived, or perceived themselves, to have descended from westerners.<sup>664</sup> For this reason, when the term appears in the Tamil literature the argument has been made (without much evidentiary basis) that it referred to foreign westerners, who, accepting a date for the *Cankam* poems in the second to fifth centuries A.D., must have been Romans. This is one of the striking circularities which surround the dating of the *Cankam* poems: the poems must date from the period in which Roman coins testify to the presence of Roman traders in India because these traders are mentioned in the poems. The *Yavanas* in the poems must

<sup>660</sup> *Mullaippattu* 59-63 'Fierce, brave, strong-eyed *Yavanas* wearing tops tightly belted by horse reins on sturdy bodies are in the eminent king's quarters, adorned with chains bearing tigers, beautiful bells and shining lamps'.

<sup>661</sup> *Perumbanarrupadai* 316-8.

<sup>662</sup> Ray (1988) 314-17 summarises the inscriptional evidence and explores possible reasons for its geographical variation.

<sup>663</sup> Day (2012b).

<sup>664</sup> Suresh (2004) 23.



be Roman traders because the poems in which they are mentioned date from the period during which Roman coins testify to Roman trade.<sup>665</sup>

There are, however, several problems with this argument, some of which have been raised by Ray in her analysis of the south Indian references to *Yavanas*. First, none of the features attributed to *Yavanas* in the Tamil literature have any specific link to Roman culture or style. The people described are generically foreign – they are different in speech, and have skills which were evidently valued, such as metalworking or soldiering, but which are hardly culturally specific. Even the reference to wine is not diagnostic. Wine was one of the major exports of the Mediterranean beyond the Roman period.<sup>666</sup> As such, it was always a luxury and imported product in south India, regardless of who ultimately brought it to the coast of the peninsula to trade. Given the likely importance of the Persian Gulf as a point of exchange discussed in chapter six, and the importance of Indian traders moving west to do business with Sasanian and Byzantine merchants, it does not seem tenable to assume that a product originating in the Mediterranean or Red Sea region necessarily reached India in the hands of people of the same background unless further evidence upholds this conclusion.

Second, and still more telling, the term *Yavana* outside the *Cankam* literature always refers to people of foreign origin, but not to foreigners. In north India, *Yavanas* are explicitly a part of the local society. On the Ashokan pillar of the fourth century B.C., which contains the earliest reference to them, *Yavanas* are people of western origin, but

---

<sup>665</sup> Ray (1988) 33.

<sup>666</sup> Will (1991).

according to the edict, they fall under the authority of the Mauryan emperor.<sup>667</sup> Likewise, in Indian epigraphic records from further south *Yavanas* are referred to and refer to themselves entirely within local cultural and social norms. Donations made to monasteries fitted local patterns of patronage and gift giving, and the notifications are always made in the same languages (Tamil, Telugu or Sanskrit depending on region and fashion) as donations recorded by other groups. Wherever *Yavanas* are specified in south Indian contexts as having an origin elsewhere, they are regarded as being most likely members of north Indian communities who may originally have come from the west.<sup>668</sup> It is, therefore, clear that *Yavanas* in the *Cankam* literature are at least as, if not more, likely to have been north Indians, who travelled to the south by ship. This conclusion is further supported by reference in the *Periplus of the Erythreian Sea* to active seafaring between the Gujurati port of Brygaza and the Malabar Coast.<sup>669</sup>

This is an important point to make because it highlights the extent to which, although the last seven decades have exposed an unprecedented amount of information pertaining to Indo-Roman trade, the interpretation of this information has on occasion become subject to substantial misdirection. For example, as discussed in the previous chapter, the role of Persians in the east-west sea trade is very unclear. Though beyond the chronological scope of this study, an equal or greater obscurity surrounds the possible involvement of early Umayyad Arabs in trade with India. Raman and Begley in 1991 pointed out this important and unexpected lacuna in the historical record. They then highlighted the apparent lack of evidence in the Tamil literature, in implicit contrast to the evidence for Roman involvement in trade: ‘very little evidence regarding contacts with

---

<sup>667</sup> Suresh (2004) 23.

<sup>668</sup> Suresh (2004) 23; Ray (1988) 315.

<sup>669</sup> *Periplus* chapter 14.

Arabs or Persians is available in Tamil literature, or in archaeological excavations'.<sup>670</sup> As the foregoing discussion demonstrates, this interpretation of the literary evidence is somewhat disingenuous: there is very little evidence regarding contacts with Romans available in Tamil literature either. Such evidence is widely assumed, based on assertions about the date of the literature and the identity of *Yavanas*, but this is a highly contested body of work and the coincidence of *Yavanas* and Romans cannot be taken for granted.

Indeed, one controversial argument worthy of close scrutiny for the dating of the Tamil sources places them in the eighth century or later, and situates the Tamil *Cankam* poems within the wider literary milieu of Pallava Sanskrit and Prakrit literature dealing with the same themes of love, morality and the disjuncture between urban and rural contexts.<sup>671</sup> While Tieken, a philologist specialising in Tamil literature, modern and ancient, makes his argument purely on linguistic grounds (and these seem convincing, at least in the absence of any systematic counter argument based on more than tradition), some external evidence can also be derived from the archaeology of the Indo-Roman phase of trade to support his hypothesis further. While the poems are, according to Tieken, consciously archaizing and therefore reference monarchs and events associated with the first and second centuries A.D., they are more likely to describe the social realities of their period of writing.<sup>672</sup> In this respect the description of the trade ports provided in the *Cankam* poems is strikingly similar to Arabic and Persian descriptions of the thriving port

---

<sup>670</sup> Raman (1991) 125-33, 125.

<sup>671</sup> Tieken (2003).

<sup>672</sup> This has parallels in other traditions of archaizing literary output in the medieval world, including northern India. Beowulf, in Anglo-Saxon writing features archaic forms clearly preserved when the poem was copied in the forms now surviving and dealt with historical idea which audiences are likely to have known and regarded as traditional at the time of performance (Swanton (1997) 3-5). Thapar (1987) uses examples of redactions and revisions of the Mahabharata to demonstrate the ways in which modifications to consciously archaizing texts could constitute loci for political and social discourse and debate.

towns of India from the eighth century onwards. In *Ahananuru*, the port of Muziris is described as ‘overflowing with prosperity’ and ‘besieged by the din of war’.<sup>673</sup> This would suggest both an urban infrastructure worth besieging and able to withstand a siege, and the likelihood of defensive structures. Kaveripattinam is also described in the poems *Mannimeekalai* and *Silapattikaram* as having been built in part by *Yavana* artisans, and it is said that there was a *Yavana* section in the city.<sup>674</sup> Again, the level of urban luxury and the implication of a substantial built environment do not fit well the archaeology of ‘Indo-Roman trading ports’ as described below. Nor do the descriptions of *Yavanas* make their identification as Romans more plausible. Such descriptions of thriving, wealthy urban port landscapes, however, do fit the writings of early Arab geographers, lending support to Tieken’s argument that while the Tamil literature is consciously archaizing, its milieu is actually that of the eighth century and later, in which maritime trade and the wealth associated with it, had expanded.<sup>675</sup>

Interestingly, the Tamil evocations of trading ports bear far less resemblance to the archaeology of ports associated with the period of Indo-Roman and Indo-Byzantine trade. Where these have been excavated and can be dated accurately, there is almost no evidence for permanent residential structures, and no evidence of monumental architecture. Rather, they appear to have been ephemeral and non-elite sites geared towards trade and the production of small, high-volume exchange goods such as beads. Tieken’s argument has received negative reviews within Tamil literary studies but apart from valid critique of elements of his statistical method Tieken’s work has not yet been the subject of a systematic refutation based on manuscript or linguistic or historical re-examination of the

---

<sup>673</sup> *Ahananuru* 149, 7-11.

<sup>674</sup> *Mannimeekalai* 19, 107-8 and *Silapattikaram* 5-10.

<sup>675</sup> Hourani (1995) 51-78 on the expansion of trade under the first Caliphate.

texts.<sup>676</sup> To re-date such an important corpus of literature by seven centuries is too large an undertaking to rest upon the possible similarity of port sites described in it to later written accounts rather than to earlier archaeological excavations, but at least for the present and in the absence of serious contradiction, Tiekens's dating of the texts must be considered seriously. That would render the Tamil texts an invaluable source for the very obscure seventh to ninth centuries of trade between India and the Mediterranean, but would considerably diminish their value to Indo-Roman or Indo-Byzantine studies. The archaeology to which the literature is here compared, however, remains a vital tool in understanding Indian trade with the Mediterranean throughout the Roman and Late Antique period.

#### **7.4 Indo-Roman trading ports**

The excavation of inland sites datable to the fourth to seventh centuries in south India would be invaluable in constructing a more detailed image of the social and economic world in which Roman and Byzantine coins moved. Unfortunately, no such closely datable site has yet been discovered in the southernmost regions of the peninsula, least of all one of the urban or elite centres at which foreign goods may have been consumed. Monastic and religious sites form one important exception but a combination of emphasis upon reconstructing sites and their lack of apparent use as residential locales mean that they provide a limited context for coin finds. The nature of urbanism in the areas covered by the modern states of Tamil Nadu and Kerala therefore remains difficult to gauge, as does the material culture of the elites. Even where the location of inland capitals

---

<sup>676</sup> Hart (2004).

can be surmised from texts, excavation is likely to be hampered by continuity of settlement. The case of Karur is the most striking. References in the *Cankam* literature suggest that at least by the eighth century there was a major elite settlement in the location called 'Karur/Karuvur'.<sup>677</sup> The large quantities of small antiquities including coins, signets and ceramic sherds which wash up in the Amaravati River in Karur also support this contention, but thus far no residential settlements have been discovered and they are likely to lie beneath (or to have been destroyed in the successive centuries of construction of) the modern city of Karur.<sup>678</sup>

The elite site of Nagarjunakonda in modern Andhra Pradesh is perhaps the only significant exception to this rule and is vital for contextualising Byzantine coin finds in south India. The site was a major elite complex including both a Buddhist *stupa* and associated monastic features and also a palace complex. It has been subject to stratigraphic excavation by the ASI between 1954 and 1960 under the direction of R. Subrahmanyam and has yielded some of the only coins and imitations of the fourth to seventh centuries which can clearly be associated with an archaeological setting.<sup>679</sup> Four Byzantine coins have been discovered at the site, all associated with what appear to be the royal sections of the complex, while a clay coin mould apparently for producing Satavahana coinage demonstrates the strong overlap between religious, political and physical foci for wealth in the south Indian landscape.<sup>680</sup> Sarma describes in addition to these genuine coins a thin uniface bracteate, pierced for suspension, which is paralleled with deposits of precious metal and coins at *stupas* elsewhere in Andhra Pradesh. A copper imitation of an *aureus*

---

<sup>677</sup> *Silapathikaram* 5.

<sup>678</sup> Day (In press), introductory section deals with small finds from the Amaravati.

<sup>679</sup> Longhurst (1938), Murthy (1977), Sarma (1973), Sarma (2000) 115-25, Subrahmanyam, Banerjee, Khare *et al.* (1975).

<sup>680</sup> Sarma (1973) on the coin mould.

discovered within the citadel of Nagarjunakonda further supports the contention that coins of foreign (western) appearance served an important role in south Indian devotional activities, and that demand for them therefore generated the production of a range of imitative products.<sup>681</sup> Other religious elite sites in Andhra Pradesh, including Yelleshwaram and Veerapuram, have also yielded ceramic *bullae* in the form of Roman coins, most likely dating from the second century and demonstrating continuity in the use of Roman and Byzantine precious-metal coinage in demonstrations of wealth in the subcontinent.<sup>682</sup> While such coin finds are suggestive of patterns of long-standing religious behaviour, however, it should be noted that the Nagarjunakonda finds are generally earlier than the period of this study and finds of late Roman coins in Andhra Pradesh are scarce.

The most important sites for understanding the wider social world within which Byzantine coins circulated, and the most important sites thus far for constructing a particular narrative of Indo-Roman trade, are often referred to as Indo-Roman port sites. Two in particular will be examined closely for their impact on the field and their detailed excavation. Arikamedu was the earliest of these sites to be excavated and formed the earliest paradigm for Indo-Roman trade. The site of Pattanam has been the most recently excavated and holds the potential significantly to reshape not only Indo-Roman studies but also understandings of the internal trade routes of south India. In addition to these seminal sites, three others in south India exhibit many similar features and have been excavated to differing degrees. The evidence from the sites of Azhagankulam, Mahabalipuram and Kaveripattinam, and Kadaikadu will also be incorporated to support more general conclusions. All of the sites demonstrate certain features in common, the received

---

<sup>681</sup> Sarma (2000) 118-120.

<sup>682</sup> Sarma (2000) 142.

explanation for which requires some revision, but which demonstrate striking similarities with other south and southeast Asian sites discovered in the last two decades.

#### ***7.4a Arikamedu***

The significance of Arikamedu in the development of interest in Indo-Roman studies has been alluded to in chapter two. The site was first identified by Faucheux, based at the French settlement of Pondichery, and was subject to some excavation by Casal in the early 1940s.<sup>683</sup> The full revelation of its potential as a trading port, however, was to wait until Wheeler, upon his arrival in India in 1945 to set up the Archaeological Survey in readiness for Indian independence, saw fragments of Arretine Ware in the Pondichery museum. His wonder at seeing this and the possibilities he saw are recorded in his memoirs:

And now here at last in Pondicherry was journey's end; precisely those ancient and dateable fabrics in a context which in southern India gave them and their associations a new meaning to us in time and space. They opened in fact a new field in the broad world of comparative archaeology.<sup>684</sup>

He therefore immediately began systematic excavations with the explicit aim of pegging Indian archaeology to the better-established chronology of Roman archaeology.<sup>685</sup>

Wheeler's excavations revealed significant brick structures, including a wall and pits and some evidence for small cell-like buildings.<sup>686</sup> The ceramic finds from the site also

---

<sup>683</sup> Faucheux (1946).

<sup>684</sup> Wheeler (1976) 41.

<sup>685</sup> See chapter Two.

<sup>686</sup> Begley (1983) 472, 475.



confirmed Wheeler's theory that the site was connected in some way to the Roman world.<sup>687</sup> Unfortunately Wheeler's early preoccupation with interpreting the site in light of Roman connections and the Roman literature concerning trade with India rapidly shaped the interpretation and preservation of evidence. Since the local wares were not recorded in similar detail to Roman or finewares it is impossible to establish what the rough proportions of local and foreign ceramics at Arikamedu were, but as the Pattanam excavation demonstrates (see below), it is likely that they were only a tiny percentage of the total ceramic assemblage of the site.

The initial publication of Arikamedu, however, already labelled it a Roman trading port and gave prominence to Mediterranean finds virtually to the exclusion of local goods and certainly to the exclusion of alternative interpretations.<sup>688</sup> The site has subsequently been subject to a further investigation under the auspices of Vimla Begley, and has been referenced in almost all works on or referencing Indo-Roman trade.<sup>689</sup> Beneath the weight of interpretation, the excavated remains from Arikamedu present a somewhat ambiguous picture. Structures at the site include a range of small rooms, which have been described as warehouses, and pits, which have been described as dyeing vats and at times have even been extrapolated into evidence for a thriving textile industry.<sup>690</sup> Small finds in addition to ceramics include thousands of beads and debitage from bead making in semi-precious stones.<sup>691</sup>

---

<sup>687</sup> Begley (1983), Comfort (1991), Warner Slane (1991).

<sup>688</sup> Wheeler, Ghosh and Deva (1946).

<sup>689</sup> Begley (1983, 1988, 1991, 1993), Begley and De Puma (1991), Begley, Francis Jr., Karashima *et al.* (1996), for example Decker (2009) 247-8, Thapar (1997) 21.

<sup>690</sup> Suresh (2010) 30.

<sup>691</sup> Francis Jr. (1991) 28-32.

Perhaps more interesting from the perspective of revising a view of trade between the Mediterranean and Indian Ocean than what has been discovered at Arikamedu, however, is what is absent. At the site there has been no consistent evidence discovered of residential structures or occupation. Had the full ceramic assemblage been preserved it may have been possible to establish how much of it resembled domestic assemblages, but in their absence other clues can be used. No latrines or middens were discovered at the site. There has been no evidence of religious sites or buildings, suggesting that any population at the site was not permanent. It is possible that the small single rooms may have been houses, which would solve the problem of the absence of residential structures. In that case, however, the evidence for warehouses, as these structures are also termed, would be lacking and is one of the key arguments for the site having been a trading centre. The small rooms are, in any case, as likely to have been workshops given the concentration of bead-making finds and parallels with sites on the North Sea, which can be shown to have been semi-permanent trading settlements rather than urban sites.<sup>692</sup> Finally, there is no evidence in the built environment of any social stratification: the entire site seems to have been the preserve of a low level of material comfort, lacking in any elite structures.

Among the small finds, one absence is extremely striking: only four coins have been discovered at Arikamedu.<sup>693</sup> As in the case of the Red Sea trading ports, it is possible that coins have not been discovered at Arikamedu because it too was a transit port, at which local market trade was not performed. This is, indeed, supported by the lack of a residential complex. Nevertheless, the almost complete lack of coin finds from Arikamedu

---

<sup>692</sup> Herteig, Liden and Blindheim (1975) 19-20 summarises the early, ephemeral nature of settlements at Birka, Sigtuna and Helgö in Norway. Blackburn (2005) 1143 also emphasises the small and ephemeral nature of early Kaupang.

<sup>693</sup> The site of Arikamedu has thus far yielded very few coin finds, including three *denarii* the location of which on the site cannot be precisely determined (Berghaus (1992c) 95).

is significant for undermining some of the most extreme theories of Roman involvement with the port. It has been suggested, for example, that the site was host to a resident community of Romans, or that it was a site to which Romans travelled overland to do business on the east coast.<sup>694</sup> Both of these scenarios are very unlikely, given the lack of evidence for circulating currency at the site. There is, indeed, no evidence for commerce at the site of Arikamedu.

#### **7.4b Pattanam**

The most recent ‘Indo-Roman trading port’ to be discovered and excavated is that of Pattanam, on the coast of Kerala, north of Kochi. This site has been excavated since 2007 by the Kerala Council for Historical Research (KCHR).<sup>695</sup> The excavation highlights the continued importance of the label of ‘Indo-Roman’ in interpreting sites and archaeology in south India, though also the potential of new research strategies and emphases. The site is publicised primarily as an Indo-Roman trading port, and has far more extensive links with the Indo-Roman research community than with research groups looking at regional networks within India for the simple reason that an Indo-Roman site will be reported by local media, and will attract more funding (internal and external).<sup>696</sup> It is also widely

---

<sup>694</sup> Berghaus (1992c) 97, Casson (1989) 25, Starr (1956) 27.

<sup>695</sup> Details of the excavations and related publications can be found at the KCHR website. Key publications include Cherian (2007a, 2007b, 2007c, 2008a, 2008b, 2009a, 2009b), Pattanam Excavation Report (2011), Selvakumar, Gopi and Shajan (2005), Selvakumar and Shajan (2009), Selvakumar, Shajan and Tomber (2009), Shajan, Tomber, Selvakumar *et al.* (2004), Tomber (2008).

<sup>696</sup> Cherian (2011b) lists publications regarding the Pattanam site (36-8), one third of the titles of which make reference to the site’s Roman connections or its identification with the Roman site of Muziris. This interest in Roman connections to the site is likewise reflected in news articles on the site: from a sample of 16 English-language articles from *The Hindu* in 2010, 7 refer directly to the Roman connection to Pattanam, 2 to its connections to the Persian world and all but one refer to the excavation by its title ‘The Muziris Heritage Project’, thereby demonstrating the implicit link between the prestige of the site and its ancient connections to the Roman world, whence this name derives (for further discussion of the name of the site see chapters 3 and 6; for articles Unaccredited Slideshow, June 19, 2010; Cherian, June 18, 2010; Correspondent

discussed as the site of Muziris, referenced in Roman sources including the Peutinger Table, which lists a place called Muziris in India as having a temple of Augustus, but which is almost impossible to date reliably.<sup>697</sup> Nevertheless, the excavators have intentionally eschewed reliance upon many of the interpretative models of Indo-Roman studies, while using the impact the label provides to generate public profile and to rally international scholarly support.



**Fig 7.5:** Section of the Peutinger Map with Muziris and a temple of Augustus highlighted in lower right.<sup>698</sup>

---

(Nedumbassery), August 4, 2010; Correspondent (Thiruvananthapuram) December 15, 2010; Nagarajan, June 2, 2010; Pereira, September 20, 2010; Special Correspondent (London), September 21, 2010; Special Correspondent (London), August 3, 2010; Special Correspondent (Kochi), May 1, 2010; Special Correspondent (Kochi), March 22, 2010; Srivathsan, May 1, 2010; Srivathsan, March 14, 2010; Staff Reporter (Kochi), September 26, 2010; Staff Reporter (Kochi), May 16, 2010; Staff Reporter (Kochi), March 18, 2010; Staff Reporter (Kottayam), September 17, 2010). The website of the Kerala Council for Historical Research also provides information about the public profile of this excavation site.

<sup>697</sup> Debate over the identification of the site as Muziris, or simply reference to the site as Muziris can be found both in academic and popular publications on the subject, including Cherian (2008, 2011a, 2011c), Cherian, Selvakumar and Shajan (2007a), de Romanis (2008), Gurukkal and Whittaker (2001) and Shajan, Tomber, Selvakumar *et al.* (2004). The Peutinger Table and the problems surrounding its dating are discussed extensively in chapter three.

<sup>698</sup> Image from Talbert (2010b).

The KCHR is in many respects a model for excavation with strategies for dealing with the local community involving close discussion with the land owners and schemes such as green archaeology, providing bicycles for the local community in order to avoid erosion of the site.<sup>699</sup> From a scholarly perspective it is unique for carefully preserving all ceramic and other small finds from the site, yielding thus far a collection of over thirty million individual pot sherds.<sup>700</sup> These will inevitably take a significant amount of time to catalogue and publish but already preliminary analysis is demonstrating striking links with other parts of the Indian subcontinent, the production of local storage vessels in imitation of Mediterranean amphorae, the presence of storage vessels probably produced in the Sasanian Empire, and the notably minimal presence of either Roman or other foreign ceramics. Indeed, fewer than one percent comprise foreign imports (predominantly Roman or southeast Asian).<sup>701</sup>

The site of Pattanam also yields similar infrastructural patterns to Arikamedu. There has been little evidence of residential buildings, though ring wells and lavatories have been discovered.<sup>702</sup> As at Arikamedu, no evidence for religious buildings or shrines have been excavated, and large buildings which might have been used as warehouses are also absent, though there is a large brick structure which may have been a wharf and which demonstrates some construction and investment in the site.<sup>703</sup> There is no evidence for elite or larger architectural structures but as at the Red Sea ports, some evidence for elite consumption, especially in the form of gold fragments and pieces of gold ornament

---

<sup>699</sup> Cherian (2011b) second abstract.

<sup>700</sup> Pattanam Excavation Report (2011) no pagination.

<sup>701</sup> Cherian (2011b) opens the report with the enclosed title 'Evidence for urban life with multi-cultural characteristics, Roman and west Asian contacts predominate' (1) before going on to summarise the huge quantity of local pottery fragments from the site (3).

<sup>702</sup> Pattanam Excavation Report (2011) 3-4.

<sup>703</sup> Cherian (2011a).

identified in layers dated to the first century B.C. to the fifth century A.D.<sup>704</sup> Unlike the site of Arikamedu, which appears to have declined and eventually been abandoned around the third century, Pattanam continued in use long into the Muslim period and beyond.<sup>705</sup> There is, however, some uncertainty about the extent to which this occupation was continuous, with the most recent ceramic evidence suggesting a break or sharp decline in occupation around the third to fourth centuries, which would correspond with evidence from Arikamedu.<sup>706</sup> The lack of coin evidence at Pattanam also shows similarities with Arikamedu. As of recent excavations there is slightly more evidence for coin use at the site of Pattanam than at Arikamedu, with around 122 copper coins identified from the site as of 2013. Of these, however, most are too corroded to be identified and it is unclear how many derive from layers datable to the period of this study.<sup>707</sup> Of those which have been identified and are of appropriate date, all have been local Chera coins. No Roman or precious-metal coins have been discovered on the site.<sup>708</sup> The quantities remain insufficient to suggest a circulating, economic medium but if coins were being used at the site for limited transactions then they were of local manufacture and cannot be shown to have incorporated foreign types.

#### ***7.4c Other sites***

The sites at Azhagankulam, Mahabalipuram, Kaveripattinam and Kudikadu have been excavated to differing degrees. Azhagankulam has been excavated over two seasons by the Chennai circle of the ASI and T. S. Sridhar of the Madras Government Museum and

---

<sup>704</sup> Cherian (2013) 44.

<sup>705</sup> Pattanam Excavation Report (2011) 3-4.

<sup>706</sup> Tomber (forthcoming).

<sup>707</sup> Cherian (2013) 11.

<sup>708</sup> Cherian (2011b) 3.

has been published as an Indo-Roman trade port.<sup>709</sup> Mahabalipuram has been excavated primarily in the context of the magnificent and mostly eighth-century and later temple complex but there has been some excavation at the one temple building which seems to have been associated with a port on the site.<sup>710</sup> The site of Kudikadu has received only survey attention but appears to show similar infrastructural qualities, including a location on a navigable river, and limited evidence of substantial building activity.<sup>711</sup> Kaveripattinam received significant archaeological attention between 1963 and 1973, yielding very similar results.<sup>712</sup> All of them have yielded only a handful of coin finds.<sup>713</sup>

In all cases, the interpretation of these sites as Indo-Roman trading ports reflects early archaeological interest in proving and exploring Roman contact with India. This has led in many cases to Mediterranean evidence being privileged over even far larger assemblages of other material, and has certainly distorted an impression of the primary function of these sites, leading to speculative interpretations, from their possible role as Roman colonies to the more understated but powerful thread of argumentation that they were trade sites developed primarily in order to trade with Rome.<sup>714</sup> While all of these sites demonstrate some contact (albeit not necessarily direct) with the Mediterranean, re-examination of the archaeology undermines an impression of these sites as substantial

---

<sup>709</sup> Raman (1991) 129, Sridhar (2005).

<sup>710</sup> Excavations of the port site at Mahabalipuram are yet to be published but some findings, including two copper coins discovered in the foundations of a beach-side temple of fourth-century date were presented at the conference 'Ports of the Indian Ocean, from the Red Sea to the Bay of Bengal' (23<sup>rd</sup>-27<sup>th</sup> February 2011) by S. Badhreenath (ASI, Chennai Circle).

<sup>711</sup> Raman (1991) 128.

<sup>712</sup> Soundara Rajan (1994).

<sup>713</sup> Mahabalipuram: two confirmed Roman finds, Kaveripattinam: two unidentified late Roman copper coins, Azhagankulam: 3 late Roman copper coins.

<sup>714</sup> The publication of such sites reflects the bias towards Roman interpretations of evidence. The emphasis on the Roman bias in writing about Arikamedu is discussed elsewhere in this chapter. Azhagankulam is published as 'an ancient Roman port city of Tamil Nadu by Sridhar (2005) who summarises the pottery findings (23) by focusing on, first the western (Roman) examples, followed by local finewares and disregards coarsewares unless they are inscribed sherds. Kudikadu is partially published by Raman (1991) 128 as an example of an Indo-Roman trading port and otherwise has never received attention in publications.

urban environments or settled sites which may have played host to large communities of foreign merchants. Rather, they appear to have been semi-permanent or at least materially low-level sites used to transfer goods, probably to inland elite sites, though this cannot be determined reliably from inland site archaeology. The substantial coin finds from the Palghat Pass and the generally inland location of coin finds discussed in chapter five provide the only evidence for such movement.

The proportion of Roman or Byzantine finds at these sites undermines the contention that they were created primarily to serve Roman trading interests. The location of five out of the six ports discussed (Azhagankulam, Mahabalipuram, Arikamedu, Kudikadu and Kaveripattinam) on the east rather than the west coast also lends itself to seeking a different origin for these ports, even if traders carrying goods from the Mediterranean also made use of them. The difficulty of identifying sites in Kerala in comparison to the more desert-like east coast makes it entirely possible that more sites with similar characteristics remain on the west coast. Nevertheless, whether the majority of such ports lay on the east or west coast, it seems clear that the east coast was not insignificant in the coastal trading landscape. The Pattanam site, moreover, does not reflect major differences between its east-coast cousin-sites, such that it is reasonable to assume on the basis of present archaeology that all the excavated sites shared a common purpose and served groups with similar interests and habits.<sup>715</sup> Whether or not the actual actors overlapped is a distinct and at present un-answerable question.

---

<sup>715</sup> Selvakumar, Shajan and Tomber (2009) examine the movement of the Periyar river delta among other pieces of evidence for the difficulty of locating Pattanam and associating it with the ancient port of Muziris.





**Fig. 7.6:** *Beads found around the Pattanam site.*<sup>716</sup>

Recent archaeological exploration in other areas around the shores of the Indian Ocean is now beginning to suggest a new interpretation for these sites, which might help to focus attention on the dynamic and agency of non-Romans and highlight both the similarities and differences which mark the Indian Ocean ports and the Red Sea sites examined in the previous chapter. The sites of Khao Sam Kaeo, Phu Khao Thong, Bang Kluai Nok, Khlong Thom and Ban Don Ta Phet (Thailand), Oc-Eo (Vietnam) and Tanjung Rawa (Malaysia) have all been subject to excavation or semi-systematic looting since the 1980s.<sup>717</sup> These coastal and riverine sites display similar features to the Indian sites described above: limited evidence for social stratification at the sites, though Khao Sam Kaeo shows some evidence of the division of the site into different manufacturing areas, no coin finds,<sup>718</sup> and extensive evidence of bead working.<sup>719</sup> It is therefore becoming

<sup>716</sup> Beads and bead-making debitage from the Pattanam site.

<sup>717</sup> Bellina (2003, 2008, 2013, 2014), Bellina and Glover (2004), Glover (1980, 1983, 1990a, 1990b, 1996, 2002), Glover, Charoenwongsa, Alvey *et al.* (1984).

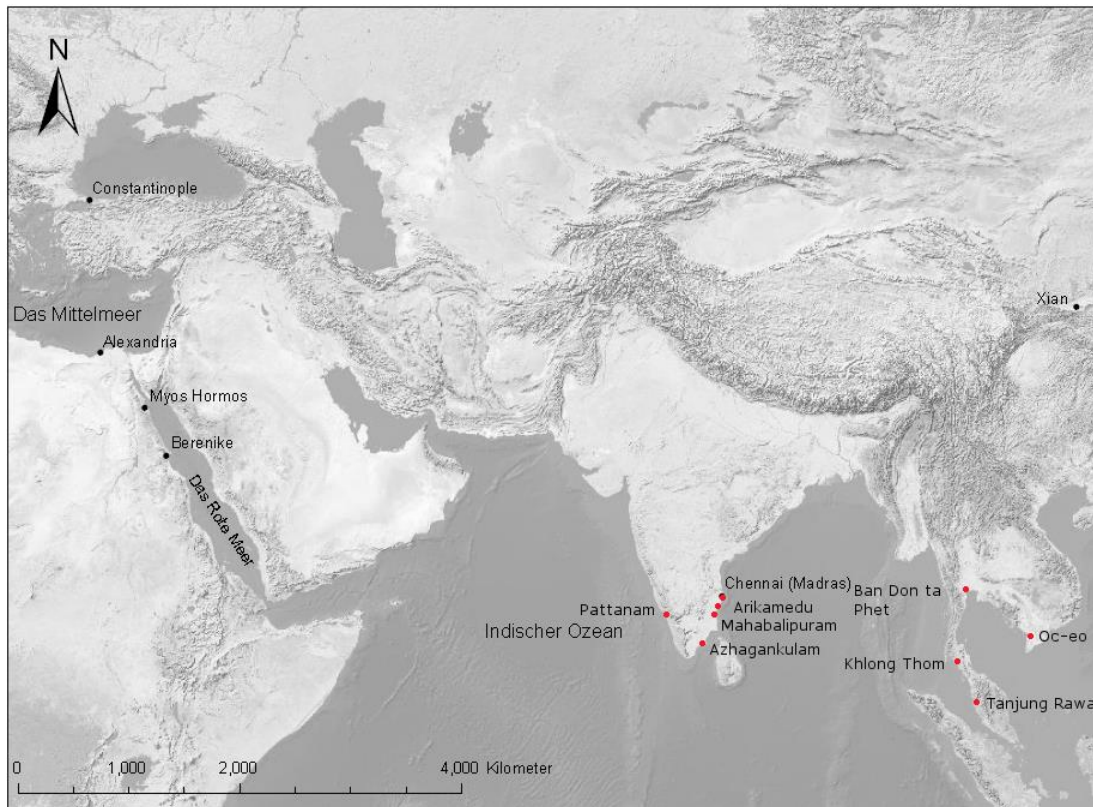
<sup>718</sup> Exceptions to this absence come in the form of a defaced Roman coin recorded from Khlong Thom and around seven imitation coin-like pendants from a range of sites, based on Roman design but probably based on Indian examples of imitation Roman coins looped for suspension. None of these examples, however, can be securely dated either in terms of production or arrival in the area and none indicate any familiarity with or use of either Roman coins more generally or coins as transactional instruments. For an illustrated summary of these finds, Borrel *et al.* (2014) 107-111.

<sup>719</sup> Bellina *et al.* (2001) 74-8; Glover (1996) 374.

possible to argue that the sites in India were part of a network of ports around the Indian Ocean, in which the areas east of India have usually been neglected in studies focussed on Indo-Roman trade because of the lack of evidence for contact with the Mediterranean. Nevertheless, they support the contention that the ports often termed ‘Indo-Roman’ were in fact linked into this much wider, and eastern-looking, network. The increasing evidence for extensive contact, expanding from the fourth century B.C. between south Asia and southeast Asia at these sites, including evidence for bead imports from India and subsequently for the creation of beads inspired by Indian designs by local craftspeople further underlines the gravitational pull of southeast Asia on this trade. It is nonetheless interesting to note the extent to which even this literature persists in attributing a dominant role to ‘Indo-Roman’ trade, in no small part as a result of reliance on the representations already explored in this thesis of that trade as having been extensive, highly organised and well-understood by historians.<sup>720</sup>

---

<sup>720</sup> Bellina and Glover (2004) 72; Borell *et al.* (2014) 111-112.



**Fig. 7.7:** Southeast Asian sites with possible archaeological connections to south Indian ports of the fourth to seventh centuries.

The position of many of the Indian sites on the east coast may also indicate that their primary trading focus was to the east, even if trans-shipped Roman wares found their way to them. The precise structure of this trade or the powers which regulated it (if any) are almost impossible to reconstruct at this juncture due to the lack of narrative sources and the limits of the archaeology, however it seems plausible to suggest that short-haul sea journeys between ports (suggested by the mooring facilities for small canoes excavated at Pattanam) existed alongside facilities for larger ships.<sup>721</sup> The *Periplus of the Erythrean Sea* also lends some support to this contention, referring to the use of small boats at the port of Barygaza which came to meet larger vessels: ‘For this reason local fishermen in the

<sup>721</sup> Cherian, Prasad, Dutta *et al.* (2009) 238-9.

king's service come out with crews and long ships, the kind called *trappaga* and *kotymba*, to the entrance as far as Syrastrène to meet vessels and guide them up to Barygaza'.<sup>722</sup> The bead trade also seems to have been significant and though its value compared to commerce involving other products (especially spices and textiles which do not survive well in the tropical conditions of south Asia) cannot be known, beads undoubtedly form a valuable index for tracing these networks.<sup>723</sup>

## 7.5 Conclusion

In conclusion, a synthesis of the textual and archaeological evidence from the Indian subcontinent creates a context for Byzantine coin finds. It becomes possible to continue reframing the traditional narrative of Indo-Roman trade around themes explored in the preceding chapters: increased awareness of the dynamism and agency of non-Roman actors in trade between the Indian Ocean and the Mediterranean, the growing need to integrate sites in India previously interpreted in light of Roman trade with a wider sphere of Indian Ocean coastal archaeology, and the degree to which interpretation of sources for which much is unknown has been driven by a desire to fit them into Indo-Roman narratives.

Close examination of the evidence available for Byzantine trade with the south of India requires first of all a reduction in the evidence base available. Without greater systematic manuscript study the Tamil *Cankam* literature cannot be regarded as of secure

---

<sup>722</sup> Periplous, chapter 44, 'Τούτου χάριν περι αὐτὸν τὸν εἰσπλοῦν βασιλικοὶ ἀλιεῖς ἐντόποι πληρώμοσιν μακρῶν πλοίων, ἃ λέγεται τράππαγα καὶ κότυμβα, πρὸς ἀνώτησιν ἐξέρχονται μέχρι τῆς Συραστρήνης, ἀφ' ἧν ὁδηγεῖται τὰ πλοῖα μέχρι Βαρυγάζων'.

<sup>723</sup> Francis, Jr. (1991) has worked on the beads from Arikamedu and A. de Saxce, working in Paris is currently undertaking a PhD in the movement of beads.

enough date or purpose to serve as a primary source for Indian history prior to the eighth century. The information it yields which may concern trade with foreigners from the Mediterranean or Red Sea is in any case so ambiguous that even if the date of the *Cankam* epics could reliably be determined to fall within the first eight centuries of the Christian era these sources could not be deployed to create narratives of Roman contact with India. There is no mention in the *Cankam* epics which is plausibly most likely to refer to traders from the Red Sea (rather than from the Arabian Peninsula, Sasanian Persia or, most likely, northwest India).

Archaeology, therefore, remains the most valuable and promising source for understanding the Indian end of trade with the Mediterranean. The current excavations at Pattanam offer both invaluable new data in the form of vast ceramic assemblages and well-published small finds and architecture, but also a new theoretical model for excavating sites such as these. In the arena of best practice, the policies of the KCHR have proved successful thus far in creating smooth community relations, raising funds and public profile for the site and incorporating the expertise of a large and international community of scholars.<sup>724</sup> The site is also providing training and research project possibilities for young archaeologists and therefore represents a vital link in the chain of continuity in south Indian archaeological studies.<sup>725</sup> In the interpretation of evidence, the excavations have demonstrated a break in the tradition of focussing attention exclusively or predominantly on evidence for Roman trade. Initial research priorities are focussing on

---

<sup>724</sup> Staff Reporter (Kochi) (September 13 2012) highlights both the range of expertise involved in the excavations and the success the team has had in raising the public and media profile of the Muziris Heritage Project.

<sup>725</sup> Cherian (2011b) 8.

connections between the site and other locations within the subcontinent and the internal economic and social structure of the site.

While the Pattanam site represents an important new resource, the excavation reports from Arikamedu and the other similar sites on the coast of south India are invaluable in testing conclusions and enabling the creation of more general models. The picture these sites collectively generate for the fourth to seventh centuries (and for the earlier Indo-Roman phase of trade) is one of remarkably little infrastructural complexity. This was commerce apparently conducted at sites with ephemeral architecture, limited docking facilities and limited evidence for permanent habitation. The networks, maritime and landward, which sustained these sites represent the next crucial phase in archaeological research. Examination of the coarse wares at Pattanam is revealing, for example, the importance of landward connections to both northwest and northeast India for the port site, while other excavations in southeast Asia are demonstrating that so-called ‘Indo-Roman port sites’ actually have much in common with commercial loci around the eastern Indian Ocean, which appear to have existed primarily to serve Indian Ocean trading circles, even if goods from the Red Sea and Mediterranean, and based on Roman textual sources, probably also Roman traders, also made use of these networks and may have led to periods of increased demand for some products.<sup>726</sup>

---

<sup>726</sup> Cherian, Prasad, Dutta *et al.* (2009) 240.

## CHAPTER EIGHT: CONCLUSION AND NEW AVENUES

### 8.1 Introduction

The previous seven chapters have explored the historical evidence for trade between the Mediterranean and south India via the Red Sea route between the fourth and seventh centuries. This has entailed not only the synthesis of material and written data, including previously unpublished coin finds from India, but also a systematic re-evaluation of some of the core sources for Indo-Roman trade and the theoretical underpinnings of the discipline. The numismatic evidence has allowed a close examination of the impact of foreign symbols of wealth and state power in the south Indian world of the fourth to seventh centuries and the dominance of actors and traders not originating from the Roman Empire has been emphasized throughout. This chapter therefore provides a summary of the major themes and conclusions of this study, both historically and in the area of methodology and theory, and also offers suggestions for future directions in research.

### 8.2 Historical conclusions

Perhaps the most significant conclusion to emerge from an examination of Indo-Byzantine exchange is the importance of non-Roman actors in the exchange between the empire and India. While other studies have referenced middlemen or speculated about the role of Persia in trade in comparison with that of the Roman world, previous studies have nonetheless implicitly or explicitly accepted the narrative constructed very early in Indo-Roman studies on the basis of the contemporaneously prevailing Eurocentrism of historical

studies and the dominance of Mediterranean written sources for trade with India. This narrative gave primary agency to Roman traders, the economic policies of the Roman Empire and the demand of Roman consumers in driving trade with India and determining its shape and structure. From the premise that Romans built superior ships to the early speculation that the Roman state may even have had a settlement or colony in south India, the gravitational force of the Roman Empire in scholarship on Indian Ocean trade was clear.<sup>727</sup>

Re-examination of the new evidence available, such as archaeological material from Berenike and Myos Hormos demonstrating the possible presence of Indian merchants in Egypt, and the coin finds from India suggesting that by the fourth century local imitation played almost as great a role in the provision of ‘Mediterranean’ gold as did trade with the west, indicates, however, that eastern traders, especially from India, but also probably from the Arabian Peninsula and later the Persian world, may have played a much more decisive role in determining routes taken, goods traded and Roman access to Indian products. The increasing excavation of southeast Asian sites with striking similarities to sites in India often referred to as ‘Indo-Roman trading ports’ also suggests that Indo-Roman and Indo-Byzantine trade may have constituted an opportunistic expansion of existing, eastern-looking trade circles by Indian and Arabian merchants. This is not to deny any agency or significance to Roman participants in this trade. The surviving textual sources, though more complex than current readings perhaps always allow, certainly suggest that people did move from west to east and the plethora of reference to ‘Indian’ goods in Roman sources suggests a demand for goods which, although not quantifiable,

---

<sup>727</sup> Casson (1991), Wheeler (1954b) 144-5.



may have exerted some influence on the shape of Indian Ocean trade networks, especially at certain points in time. Insofar as numismatic evidence can be used to reconstruct the chronology of trade the fluctuations of Roman and Byzantine coins in India seem to coincide with periods in which warfare, especially between Rome and Persia, may have made it difficult for foreign merchants to travel west. Wars between Persia and the Roman and Byzantine empires seem to have generated environments particularly difficult for trade, as also suggested by Prokopios' account of Byzantine efforts to by-pass Persian traders during a time of active hostilities.<sup>728</sup> They point to a decline in trade in the third century, which was never to recover to former levels, but also to a probable increase in trade and contact in the late fourth and early fifth centuries, before a final decline in the first quarter of the sixth century.

While, as already noted, the textual sources support the view that Romans did, indeed, move east, even these documents, which have so long been used to support a Romano-centric narrative of trade, can be shown to provide a different impression of this exchange if read without the pre-existing assumption of Roman dominance. While people and goods almost certainly moved both east and west and were probably exchanged and transferred between merchants at nodal points in the Persian Empire (though this cannot yet be demonstrated archaeologically but must be deduced from textual sources and the pattern of evidence elsewhere where greater investigation has been possible), this study suggests that the decisive momentum lay with eastern traders in determining the shape and volume of trade.

---

<sup>728</sup> Chapter four, 145-6.

The supposed ‘trade imbalance’ which required Romans to give precious metal in return for spices has traditionally supported the narrative of Roman agency by placing Roman fashion at the heart of the trade network.<sup>729</sup> Roman demand for silk and spices was undoubtedly a factor in the expansion of trade but it is likely that the route to the Red Sea was an expansion of pre-existing networks focussed on the Indian Ocean, which merchants from the Mediterranean also made use of but never dominated. Alongside assumptions of western dominance, the theory of a trade imbalance also makes anachronistic assumptions about the distinction between precious metal, coinage and goods of value, which cannot be shown to have applied in the first seven centuries A.D. Silver and gold were coined money in the Roman Empire but in India precious metal coins appear to have been a manufactured good in demand for religious and ritual giving. Local imitations suggest a demand which went beyond the bullion value of the metal and made items with the appearance of Roman and Byzantine coins objects of desire in local economies.<sup>730</sup>

This also has relevance for interpreting coin finds in India, which cannot be viewed either simply as bullion or as a medium for local economic exchange subject to theoretical models such as distribution patterns of market commerce which might apply within the Roman world. Rather, the distribution of coins in India and their function (indicated among other things by the use of piercings for suspension or occasional finds of coins with other jewellery, a cultural phenomenon with parallels in Byzantium) offers better evidence for south Indian social and economic structures than for Indo-Roman and Indo-Byzantine trade. Despite small-scale issues of base-metal coinage by some south Indian authorities during the early centuries of the first millennium A.D., south India did not represent a zone

---

<sup>729</sup> De Romanis (2006) 55-6 describes the growth of the theory of trade imbalance resulting in the flight of precious metals from the Roman Empire, ultimately endorsing this conclusion in his own writing.

<sup>730</sup> Chapter five, 197-9.

of monetized circulating currency, though small local currencies may have been issued by local rulers, possibly for ceremonial or symbolic transactions, such as to armed retainers, or within the sphere of the royal court and capital.<sup>731</sup> Coined metal rather seems to have been associated with elite practices of ritual giving within a wider social context of tributary lordship. While little can be pieced together of south Indian political history in this period, the epigraphic records of royal dynasties and the Tamil ‘hero stones’ emphasise the foundational nature of military strength and performative wealth distribution to upholding political authority.

Outside the study of Indian Ocean trade networks, such a reconstruction of south Indian political structures in the first to seventh centuries would not seem surprising. It conforms closely with patterns of lordship comparatively well understood and attested elsewhere in the pre-modern world.<sup>732</sup> This continuity with wider patterns of statehood and economic practice in the Late Antique and early medieval world in which Indo-Byzantine trade occurred (from Ethiopia to Persia and India) is a further significant conclusion of this thesis. Indo-Roman studies have developed a discourse which runs the risk of shearing the trade networks it studies of their wider historical context. Indo-Roman studies have been the field for debates including whether Roman military strategy in the east was determined by trade with India; the extent to which coastal trade was responsible for state development in south India; and whether the rise and decline of the Aksumite state can be correlated with shifts in Indian Ocean trade with the Mediterranean.<sup>733</sup> While none of these speculations are *prima facie* invalid, their number and shared theme of placing trade

---

<sup>731</sup> De Romanis (2006) 69; Krishnamurthy (1997).

<sup>732</sup> For example, this loose pattern of military kingship is well-articulated in an Anglo-Saxon context by Wallace-Hadrill (1971) 98-120 or Faith (1997).

<sup>733</sup> De Romanis (2006) 58-9; Maloney (1970) 603-4; Hable Sellassie (1972) 13.

between India and the Roman world centre-stage in much larger narratives of state-building and -maintenance arguably indicates a problem of perspective within the field, especially when these theories are so often shown to rest on very flimsy evidence.<sup>734</sup>

An assessment of evidence for Indo-Byzantine exchange indicates that unless far more striking proof should emerge, the long-distance maritime trade between India and the Mediterranean deserves to be treated as a peripheral though socially valuable function of a minority of people within all of the societies involved (with the possible exception of tiny communities such as that which may have existed on Sokotra and genuinely did exist as a result of passing trade routes<sup>735</sup>). Working from west to east, the evidence of legal codes from Byzantium is notable for the absence of reference to trade with India. Maritime loans are a specific category of legal document which would have had bearing upon the Indian trade but which were developed in the context of Mediterranean seafaring. Otherwise, beyond the mention of diplomatic links to the east (diplomatic links being part of the widely understood political apparatus of pre-modern states and Byzantium in particular<sup>736</sup>) and the requirement to pay tax on imported goods, Roman and Byzantine legal sources say nothing about trade with India either with respect to its regulation or by way of an exception to the general prohibition against exporting specie.<sup>737</sup> While this law was clearly flouted and may not have been stringently enforced along the Red Sea coast, had the state

---

<sup>734</sup> For a critique of the evidence for these theories see Raschke (1978) 635 on the impossibility of quantitative evaluation of Roman trade with India, chapter seven and chapter four.

<sup>735</sup> Strauch (2013) details the multiple inscriptions in the Hoq cave on Socotra demonstrating the mixed population of Indians, Arabians and Mediterranean Greek-speakers who inhabited the island and travelled through it. Chapter 6, 262-3 on Sokotra.

<sup>736</sup> Kazhdan (1992) 3-21 and Chrysos (1992) 25-39 explore the concept of Byzantine diplomacy and Byzantine diplomatic policies between 300 and 800 respectively.

<sup>737</sup> Chapter six, 286-7.

relied upon this trade in any significant way it would seem strange to maintain laws prohibiting its primary exchange mechanism.

The excavation of the Red Sea ports has also become a playing field for debates about the importance of state involvement but there is little evidence at either Berenike or Myos Hormos that is strongly suggestive of Roman state control over these sites, regardless of whether or not the state extracted some degree of taxation from the trade passing through them.<sup>738</sup> Arguments have been put forward that street layouts imply control or that the presence of tax collectors at the sites required that they be government concerns.<sup>739</sup> However, both sites are small enough and in sufficiently hostile locations for some street planning to be plausibly the product of private enterprise, and the assertion by the state of its right to tax an activity does not indicate its origination of that activity or its control over it.<sup>740</sup> There is little evidence to suggest that taxation in the Late Antique world expressed itself in structured supervision of trade and even legislative restrictions the state could have exerted, such as those concerning the export of precious metals, do not seem to have operated.<sup>741</sup>

Dividing the history of Aksum from assumptions about the centrality of Indo-Roman trade is even more challenging, but Aksumite archaeology is independently moving in that direction, and a reassessment of the trade-related evidence in chapter four undermines some of the cornerstones of a commercially oriented narrative of Aksumite history. In particular, the coinage of Aksum appears more plausibly to have been a state

---

<sup>738</sup> Chapter three, 101-2.

<sup>739</sup> Sidebotham (1986c) 290 and (1990) 27.

<sup>740</sup> Chapter six, 283.

<sup>741</sup> Chapter six, 285-6.

coinage designed to facilitate taxation, local monetized exchange, possibly the payment of the military, and the promotion of royal authority than a medium of inter-polity exchange. The port of Adulis also cannot be shown to have any features indicative of state control. The absence of defensive features is particularly suggestive. Finally, the epigraphic records of the Aksumite state, like the legal codes of the east Mediterranean, do not suggest a state reliant for its position or power on mediating trade between the Mediterranean and India. The concerns of the state appear similar to those of other contemporaneous kingdoms and empires: the maintenance of order, the conquest or subjugation of neighbours and the acquisition thereby of tribute or plunder.

Evidence for the economic structure of the Sasanian state in the period covered by this study is almost non-existent, but the great carvings at Naqsh-e Rostam, which provide perhaps the best indication of Sasanian imperial self-representation, show obvious similarities to Aksumite epigraphy: the focus is on military power and the receipt of tribute. No allusion to trade is visible (though that is not surprising, given the monumental nature of the structures). The role of the Sasanian Empire in trade between the Mediterranean and the Indian Ocean remains one of the most important areas for future research but at present there is no clear evidence for trade having played a substantial role in state affairs. Roman sources, especially the account of Prokopios, may imply by the eagerness it demonstrates on the part of Justinian I not to pay the Persians for eastern goods at a time of war between Persia and Rome that such trade was not totally insignificant (though it could also have been a symbolic desire not to be economically tied to an enemy). But Prokopios also does not allude to the Persian state doing anything to control trade. He refers only to merchants coming from India to Persia and to Persian

merchants buying their goods. It is, however, possible that this increased association of traders from a certain political region with that polity in the rhetoric of Roman writers represents a change in the dynamic of Roman-Byzantine interactions (both real and imagined) with India between the first and seventh centuries. The need for further archaeological evidence from the Persian Gulf is great, but the excavation at Siraf is notable for the absence of indications that it was a major trade port in the Sasanian period. Since it appears to have been a defensive installation and therefore most likely governmental that suggests at least that there was no necessary overlap between a state-controlled site and long-distance trade. Viewed from the perspective of trade rather than state control, however, the shores of the Persian Gulf seem the most likely location from the fourth century onwards for points of connection between traders moving from the Red sea east and from India to the west.

In the case of south India the lack of contemporaneous evidence for political and economic structures makes it difficult to estimate state involvement in trade. The example of the Kushan state given in chapter four, however, highlights a slightly earlier and north Indian example of a state which had a port and seems to have made some exertion to secure it but which was not a trading state. The archaeology of the Indian coastal port sites suggests no major investment by outside sources. Even more so than the Red Sea ports they appear to have been ephemeral with simple infrastructure, lacking either defensive or elite built structures. As in the case of Roman and Byzantine tax officials along the Red Sea coast, there are indications in the *Periplus* that at least in the first century A.D. there may have been rulers who expended some energy on posting officials to such ports to

regulate trade or even who sought to direct trade to their own ports.<sup>742</sup> Like the other states involved in Indo-Byzantine commerce, however, while such south Indian polities may have benefitted from trade along their coasts they seem to have operated in a political and economic environment primarily ordered around warfare, agriculture and the receipt of tribute.

Nowhere in the history of Indian Ocean trading networks in the fourth to seventh centuries is the most plausible reconstruction of the surviving evidence that long-distance trade was anything but a minority and peripheral activity from which governments may have extracted some share of the profit but upon which they did not rely. This should not suggest that the goods traded were exclusively either elite or entirely peripheral in the societies which received them. The fairly affordable nature of some Indian spices and their importance in medicinal compounds in the Roman world gave them a noticeable role in the construction of shared material cultural norms. Likewise in south India the production of imitations of Roman and Byzantine coins of varying levels of quality suggests that cultural practice gave some prominence to this particular product. The perception and affordability of, and cultural need for, products involved in Mediterranean-Indian Ocean exchange would be a productive area for further study, especially following Parker's detailed examination of Roman perceptions of the concept of India. In all cases, however, the states which lay along the maritime route between the Mediterranean and India, and parts of whose population engaged in trade, appear to have supported themselves through a classic pre-modern combination of taxation and tributary warfare, with differing emphases

---

<sup>742</sup> *Periplus* chapter 52 makes a reference to ships being brought under guard to Barygaza. Palmer (1947) and in response Casson (1983b) have presented opposite views as to whether the Sakas or the Andhras therefore controlled this area of shipping and were responsible for bringing ships to the port, though neither writer doubted that the fleeting statement denoted state control over traffic into the emporium.



and success rates but the same structural underpinnings.<sup>743</sup> This should never be forgotten when considering the significance of this trade or its historical impact.

### **8.3 Theoretical and methodological conclusions**

The logic in this study of defining Indo-Byzantine trade (of the fourth to seventh centuries) as a distinct topic from Indo-Roman trade of the first three centuries A.D. was primarily to fill a gap in historical research caused by an artificial division in existing scholarship between the pre- and post-third-century phases of Mediterranean trade with India. It provided a useful platform from which to reassess evidence for Indo-Roman trade alongside new evidence from the later period, but was never intended to function as a continued disciplinary or periodic dividing line. As the frequent application of early evidence to the fourth to seventh centuries of the Christian era in this thesis has demonstrated, when the trade networks are examined on their own terms, the distinction appears particularly arbitrary, and the lack of explanation for it in some scholarship underlines this point. This thesis has often and intentionally blurred the line between Indo-Roman and Indo-Byzantine and methodologically there is no compelling reason for it to be maintained. Hopefully this study, by validating the inclusion of the fourth to seventh centuries (which were already beginning to re-emerge into Indo-Roman studies publications but still as a distinct and peripheral subject<sup>744</sup>), will broaden the subject to include them rather than promoting Indo-Byzantine trade as a distinct subject from Indo-Roman. In part to reflect this reunion of the two subject areas, and also as a result of the

---

<sup>743</sup> For a discussion of this see chapter four 147, 152-3.

<sup>744</sup> Tomber (2009) is notable for fully incorporating the late Roman period into her analysis of Indo-Roman trade; Power (2013) 7-8 however points out the persistent neglect of the fourth to seventh centuries in most research.

evidence presented here that non-Roman agency must be considered of far greater significance in trade, it may be time to move away from any kind of Indo-(Roman/Byzantine) label altogether and into the realm of formulations such as Mediterranean-Indian Ocean exchange or pre-Islamic Indian Ocean trade. This would also conform with developing trends in maritime history, which are foregrounding seascapes as interactive landscapes in their own right, which cannot simply be defined by the cultures which inhabit their edges.<sup>745</sup>

Nevertheless, there are differences between the first to third centuries and the fourth to seventh. That they are changes in scale or emphasis within a continuity of themes and dynamics does not obscure them altogether. In particular, the total volume of trade and contact between the Mediterranean and India probably did decline significantly during the third century and never seems to have again reached first- to second-century levels. This is impossible to quantify further and is still not conclusive, but rests on the combined evidence of textual, numismatic and ceramic evidence, which all point to fewer finds of Roman artefacts in south India and fewer references to India in textual sources. It is also probable that the political situation of the Sasanian Empire vis a vis the Roman state came to play an increasingly significant role in Roman-Byzantine perceptions of trade and access to routes. Certainly, the issue of competition, which looms in the late antique sources is absent in the earlier evidence. There is, however, no evidence for either increased or reduced diversity of participants in trade. The inscriptions from Sokotra and Tamil brahmi sherds from the Red Sea coast point to a very mixed trading milieu, which for the later period is suggested by textual references. The political identities of those

---

<sup>745</sup> Recent publications advancing this new conceptualisation of maritime space include Bentley, Bridenthal and Wigen (2007) and the 2006 (111.3) special volume of the *American Historical Review*, introduced by Wigen (2006) which focused on sea spaces and oceans as units of historical inquiry.

involved in the trade may, however, have become more meaningful from the fourth-century. The most significant changes visible in this study concern responses in India to the most visible evidence for this contact: the coins. While total numbers of precious metal finds decline from the third century, there is increased evidence in the later finds for modification and production for use in ritual and display. The method of display also seems to change, with attached loops for suspension on earlier coins giving way to the double piercing. This can be found on early examples but is much more common on later finds, which never carry the welded suspension loop. In both cases, though, it is the imperial bust which is the focus of attention, underlining the continuities which link Indo-Roman and Indo-Byzantine trade despite such chronological developments.

Furthermore, it is vital methodologically in all aspects of pre-modern Indian Ocean studies and the study of trade with the Mediterranean to highlight the paucity and enormous complexity of the surviving evidence. Too many conclusions have been reached and continue to stand or to be debated in a way which suggests far more security than is the case. As Raschke lamented in 1978:

The study of Rome's commerce with the East appears in modern works of synthesis as a curious and unnatural combination of fantasy and statistics, romance and economic theory. Much is asserted, little is proven. In the absence of a substantial, easily accessible body of evidence, hypothesis replaces fact and the passage of time produces the assumption that what was tentatively suggested in a previous decade is, in the absence of contravention, established proof.<sup>746</sup>

All studies should incorporate full discussion of the evidentiary difficulties facing a scholar of Indian Ocean-Mediterranean exchange and justify the conclusions drawn or the

---

<sup>746</sup> Raschke (1978) 605.

interpretations used even in the case of sources such as the *Periplus*, which have been used almost since the inception of the field of study. This is particularly vital in a field which relies on multi-disciplinary approaches and in which it therefore becomes possible to build very shaky structures on the over-confident pronouncements of specialists in other fields who fail to be explicit about the contingent and speculative nature of many of their conclusions and their evidence base. Closely related to this is a need not to persist in interpreting evidence through the strong lenses of Roman agency or economic centrality. While there is a need for theoretical models, especially when evidence is so thin and diverse, these need to be less stridently expressed and less ideologically driven than in the case of traditional narratives.<sup>747</sup>

Indo-Byzantine studies represent an important arena in which to promote the trans-regional potential of pre-modern studies to shape modern understandings of global networks and the concept of global space. In addition to providing the basis for a reassessment of evidence for the historical undertaking of this trade (outlined above) it also provides an opportunity to examine the strengths and weaknesses of trans-regional and multi-disciplinary historical studies. Here the primary area for new development currently falls into the category of praxis. The dismantling of Orientalist structures and overly commercial models or an over-stated discontinuity between the classical and Late Antique periods is already well underway and this study contributes to those movements. In the often-neglected area between methodology and theory, however, the doing of global history is in need of development.

---

<sup>747</sup> See in particular chapter two for the operation and consequences of these models.

#### 8.4 New avenues

From the perspective of maximising the potential of historical sources, a revisiting of the existing textual sources (especially the *Periplous of the Erythreian Sea*, the *Christian Topography* and the Tamil *Cankam* literature) is a prerequisite for much further study. These texts should be evaluated as creations with a specific history of transmission and recording, associated with other texts or other sections of larger works and should be subject to critical commentary which acknowledges and explores these questions of manuscript tradition, genre, multiple recensions and audience reception (both at the time of writing and at the time of subsequent copying). A focus on the ninth-century rise in Byzantine manuscript production and the evidence from the Heidelberg copy of the *Periplous of the Erythreian Sea* and the earliest surviving copy of the *Christian Topography* may help to link these two unique sources on Mediterranean and Indian Ocean exchange in more ways than a partially shared subject area. It is not claimed here that these texts were demonstrably altered in the ninth century but the choices made in compiling the collection in which the *Periplous of the Erythreian Sea* resides and in combining Book Eleven with the theological chapters of the *Christian Topography* are worthy of consideration in interpreting the surviving narratives. The marginalia, illustrations (in the case of the *Christian Topography*) and scribal errors and emendations in these texts and the other geographical works in the Codex Palatinus Graecus 398 (Heidelberg) might also be subjected to systematic scrutiny since, beyond copying the text, these elements of the surviving sources are products of the ninth-century production.

Archaeologically, understanding the role of other southeast Asian coastal sites in trade around the Indian Ocean seems a particularly promising and expanding venture. The identification and exploration of sites along the coast of the Persian Gulf datable to the first seven centuries A.D. would also help to nuance and fill out the currently very insubstantial narrative of Persian involvement in trade with India and supplement ceramic evidence for Persian trade with India with material from the subcontinent itself. Finally, perhaps the most important unexplored question still facing pre-Islamic trade between the Indian Ocean and the Mediterranean concerns its end. The numismatic, literary and archaeological evidence surveyed in this thesis all suggest that trade had slowed considerably by the beginning of the sixth century, that it continued at an appreciable but reduced level until the mid-sixth century (Justinian is the last Byzantine emperor to be represented by more than single coin finds and was also contemporaneous with the probable writing date of the *Christian Topography*), and finally ceased altogether in the second quarter of the seventh. This is certainly the last date from which coin finds can be identified and they are so few that their circumstances of travel may have been extremely serendipitous and therefore do not provide evidence for thriving trade networks.

After the cessation of trade links with the Mediterranean there is no further published evidence of trade via the Red Sea reaching India until the late eighth-early ninth century, by which point the new phase of commercial contact and expanded trading made possible by the Caliphal government of the Abbasids, and explored far more extensively than that of the earlier centuries, had begun. Precisely why trade all but ceased in the mid-sixth century is unclear. The date of its collapse does not correlate with the Arab invasion

of Byzantine and Persian territories, as has been speculated in earlier literature.<sup>748</sup> Nor is there any evidence for transition from Byzantine to Muslim trade. Rather there seems to have been a discontinuity of almost two centuries. It is possible that trade from the Indian Ocean to the Mediterranean dwindled because of on-going warfare between the Byzantine and Persian Empires, which would have caused insecurity and perhaps reduced the surplus wealth available for consumption of eastern luxuries.

Natural factors also cannot be ruled out as contributing to a decline in trade, though they may not have been decisive. The environmental event of the mid-sixth century, identifiable in dendrochronological records and visible in a range of literary sources from the Mediterranean and Near East is one such possible contributing factor. This event of unknown cause though likely to have been a major volcanic eruption, seems to have reduced atmospheric light levels and the average temperature for at least a year, causing crop failure and, from the evidence of literary sources, a degree of panic and uncertainty. What effect such an event may have had on long-distance maritime traffic cannot be known but it is possible that it negatively impacted upon a commercial network reliant upon trusting the regularity of phenomena such as the monsoon rains. A fall in temperature may temporarily also have affected the spice crops upon which trade relied.<sup>749</sup>

The other natural disaster which may have contributed to the decline in trade was the plague which reached the Byzantine Empire in 542, probably from the east via land routes. Almost certainly the first recorded outbreak in the west of bubonic plague, its toll

---

<sup>748</sup> Miller (1969) 278.

<sup>749</sup> Exploring the event primarily from dendrochronological evidence: Bailie (1994), Stothers (1984). Reviewing the scientific and the historical evidence Arjava (2005) comes to the conclusion that the event was unlikely to have been significant but it remains a part of the discussion of sixth-century economic and social history.

on urban populations in particular is preserved in the records of Prokopios.<sup>750</sup> This seems to have resulted in significant depopulation and the destabilisation of urban economies in particular, thereby reducing the primary source of demand for Indian goods, as well as possibly making foreign traders reluctant to visit imperial ports.<sup>751</sup>

Based on the evidence presently available it is impossible to determine precisely when and why Mediterranean-Indian Ocean exchange collapsed at some point between the beginning of the sixth and the middle of the seventh centuries. What occurred either along the coast of the Red Sea (where sites seems to have been abandoned), in intermediate trading locations such as Aksum and the Persian Gulf, or at the south Indian ports associated with this trade, is also not clear. Recently it has been pointed out that the contraction of the Aksumite state seems significantly to have post-dated the major reduction in trade with India, and chapter four presented some possible alternative reasons for its withdrawal from the coast.<sup>752</sup> In India some of the sites excavated had already been abandoned long before the collapse of trade with the Roman Empire (such as Arikamedu), while others, like Pattanam continued to be used into the modern period. The seventh and eighth centuries throughout the Mediterranean-Indian Ocean trading circuit therefore constitute the next major topic of study.

Methodologically the most important new direction lies in the practice of global and multi-disciplinary study.<sup>753</sup> However, the practice of doing global history and

---

<sup>750</sup> Prokopios *History of the Wars* Book 2.22-23.

<sup>751</sup> Stathakopoulos (2004) 58.

<sup>752</sup> Phillipson (2009) 367.

<sup>753</sup> Important theoretical works, particularly (though not exclusively) dealing with recent pre-modern global history include: Bayly (2003), Boozer (2012), Geraghty (2007), Geyer and Bright (1995), Hopkins (2002), Kocka (2013).



communicating across disciplines is held back by traditional modes of scholarship. Where traditions of scholarship have developed to maintain the integrity and accuracy of scholarship, such as systems of peer review, caution is clearly necessary when proposing new approaches. In the case of some possibilities opened up by new technology, however, changes in practice would not need to impact upon the quality controls built into scholarship or require compromise of foundational standards of referencing or presentation. Indeed, they might widen considerably the scope of these mechanisms. Encouraging electronic publication and the use of internet communication to foster links between scholars does not, for example, diminish the standards of evidence required to uphold historical conclusions or necessarily impinge upon processes of peer review (this is a matter for journal policy not a question of the format in which publications appear), yet many important journals for studies of south Indian trade with the Mediterranean have barely any electronic presence.<sup>754</sup> Attendance at conferences likewise forms a vital thread of human connection and collaboration in the development of ideas, which live internet connections at gatherings would not replace but could enhance or at least allow more people a chance to participate in. A new method of doing global and multi-disciplinary history must begin from an open acknowledgement of the reality that people undertake research as part of real lives determined by the economic and social context in which they live. Historical scholarship has often sought to present knowledge as a complete product which, in its finished and disseminated state, conceals the process of construction. It is unclear whether this any longer contributes to best practice or is sustainable within an expanding global scholarly community.<sup>755</sup> There are already moves towards a different approach being made at individual sites (such as the community-relations exercises which

---

<sup>754</sup> *Studies in South Indian Coins* does not have a website and *Numismatic Digest* offers no online indexes or other content information. Both are difficult to access outside the Indian subcontinent.

<sup>755</sup> Vincent and Wickham (2013).

have become a crucial part of the Pattanam excavations) but they have yet to be recognized as an integral part of research methodology in sub-continental archaeology.<sup>756</sup>

### 8.5 Indian Ocean studies and interdisciplinary research

The study of the pre-modern Indian Ocean lends itself to multi-disciplinary approaches most obviously because so few sources can be viewed in isolation to provide a coherent picture. It does not have either a well-understood and securely fixed archaeological record, or a clear literary narrative history onto which it might be tempting simply to hang other sources. Interdisciplinary work in Indian Ocean studies is not new, as foregoing analysis of Wheeler's publication of Arikamedu and the current Pattanam project illustrate *par excellence*. These studies have yielded valuable conclusions, but they also demonstrate structural weaknesses in interdisciplinary methodologies. They suffer most from the problem of mutual incomprehensibility: across regions and disciplines terminology remains very diverse in Indian Ocean studies, compounding the difficulty of translating across necessary distinctions between scholarship focussing on different materials or studying or conducted in different languages. On the subject of discipline-specific and often unavoidably technical analysis and vocabulary, little effort is often made to elucidate these to a non-specialist reader. As a consequence, multi-disciplinary studies often become a showcase of current research, which is accessible as individual articles but which does not achieve the aim of interdisciplinarity.<sup>757</sup>

---

<sup>756</sup> Tuttle (2013) 18-21.

<sup>757</sup> Examples of studies which are commendably wide-ranging but suffer from varying levels of mutual incomprehensibility: Begley, Francis, Karashima *et al.* (1996), Boussac and Salles (1995), Reade (1996).

In south India the politics of history also mitigate against effective interdisciplinary studies. Two themes, in particular, frustrate efforts to create a semblance of cohesive narrative: the persistence of the ‘*Cankam* age’ as something between a mythical trope and a historical period, and the closely related insistence upon framing historical questions by means of the perceived dichotomy between Dravidian and Indo-European language and culture. The difficulty of interpreting evidence in light of these constructs is discussed in chapter six, but their implications for interdisciplinary studies are also significant: if evidence is being squeezed into pre-set narratives in its initial interpretation, conveying its meaning and significance to others in a way that is transparent and open to discussion, especially if those others do not share a commitment to the pre-set narrative, becomes almost impossible. Nowhere is this clearer than in the case of the ‘Roman’ identity often bestowed upon *Yavanas* in Tamil literature, discussed in chapter seven.

A vital underpinning of effective interdisciplinary research is also open discussion of the methods applied to any particular region, period or evidence type and the limits implicit in this methodology. This is another area where Indian Ocean studies could develop a stronger interdisciplinary practice. The case of literary history and epigraphy is particularly noteworthy. In both of these fields the tendency in scholarship has been to express the certainty, not the uncertainty, factor in studies, overplaying conclusions and not drawing attention to possible pitfalls in methods. While this study does not advocate the development of a historical style framed around uncertainty and prevarication, when building constructs out of multiple datasets it is always necessary to understand fully the weaknesses in those datasets to know where overlap can be trusted or hypothesis attempted.

In order to piece together the fragments of multiple evidence types relevant to Mediterranean-Indian Ocean exchange, many of the same practical issues attendant upon creating a methodology for global history also apply. As noted above, lack of explicit reference to the problems of evidence or differing interpretations make researchers overly reliant on the conclusions reached in other studies without equipping them to assess those findings critically. Studies containing multiple different disciplinary studies often lack fundamental apparatus for allowing a scholar to navigate material, such as a full glossary of technical terms and abstracts for each work. Above all, writing for the explicit benefit of a multi-disciplinary audience and being open about the certainty of conclusions reached would enable much more productive debate and discussion among scholars all working towards a clearer understanding of trade within the Indian Ocean and between the Indian Ocean and the Mediterranean in the pre-Islamic period.

## **8.7 Conclusion**

This thesis argues on the basis of fourth- to seventh-century evidence for trade between the Mediterranean and the Indian Ocean via the Red Sea maritime routes, and especially on the basis of numismatic data from south India, that various features of Indo-Roman scholarship are in need of revision. The first seven centuries A.D. need to be studied as a continuous whole rather than creating an artificial disjuncture in the third century. Paradigms developed in the nineteenth and early twentieth centuries, which gave principle agency to western actors can be challenged on the evidence of new and old sources. It appears that much of the trade was in the hands of eastern merchants moving from India and (probably) the Persian Empire and the Arabian Peninsula to the west

bringing spices and textiles and seeking coined precious metal, wine and perhaps oil. People also certainly moved both ways along these trade routes as merchants, slaves and skilled workers. Rather than driving demand and the development of an Indian Ocean trading infrastructure, however, Roman demand seems to have provided an opportunity for the expansion of a trading network within the Indian Ocean and incorporating Southeast Asia. When assessing the impact of this trade on the societies which participated in it, however, all current evidence points to state authorities seizing the opportunity to tax trade but being in no way reliant upon it. In no case is there clear evidence for state creation of trade networks. The polities which were linked by these sea routes were connected much more fundamentally by the three concerns of most pre-modern settled states: agriculture, warfare and the extraction of tax or tribute from their population and/or neighbours.

This thesis has also highlighted the extent to which the practice of historical research, especially in a subject marked by the need for multi-disciplinary and trans-national scholarship, cannot be separated from the theoretical approach to research. Whether in the analysis of evidence distribution, the ability of scholars to engage in open discourse or the access of researchers to up-to-date analysis, there is an immediate need for more effective global communication to foster dialogue and allow the diverse emphases of scholars approaching Indian Ocean and Mediterranean trade from different perspectives to engage in productive discussion. This thesis therefore sets out a number of possible steps to make use of the currently available and usually free web-based technologies, which provide an opportunity for improved communication and the creation of global research networks. Study of exchange between the Indian Ocean and the Mediterranean in the pre-Islamic period has the opportunity to shape the wider field of global historical research by

developing a methodology explicitly concerned with the human experience of undertaking research. Currently, without an emphasis on global and workable praxis, the theory of global history risks remaining a fashionable but superficial and above all first-world, discourse.<sup>758</sup> Instead, this thesis has tried to demonstrate that by challenging fossilized Orientalisms, by bringing together the newest developments in textual analysis and, utilising the possibilities of information technology, Indo-Byzantine study has the potential to inaugurate a new departure in global historical studies, in which global history not only focuses on trans-regional historical topics but also involves a global community of scholars.

The final conclusion of a close examination of Byzantine trade with India is that the significance of this trade in volume or impact upon state structure or revenue should not be overestimated. Given the common, though not universal, tendency within Indo-

---

<sup>758</sup> In addition to the publications on global history already referenced, all of which originate from western publishing houses and academics based at western universities, a Google search (conducted on 3/7/2013) of the term 'global history university' is illuminating: of the first twenty results, fourteen were to departments or centres based at western universities. The remaining six results were general information sites or references to specific journals (also western) concerned with global history. No results corresponded to teaching or research centres outside the western world. In order to test for bias by Google towards western institutions the search term was replaced with 'Indian history university'. In this case of the top twenty results five were the departmental or faculty websites of western universities, four were the websites of Indian universities and the remainder were general information sites. This search provides only one fairly crude index of the identity of 'global history' as a historiographical concept. It does not address history of places outside the location of study conducted under other headings, e.g. in centres for American studies at a Chinese university (such as the Center for American Studies at Fudan University, <http://www.cas.fudan.edu.cn/index.en.php> (accessed 15/04/2014)). It also does not take in scholarship potentially being conducted and disseminated in languages other than English. In the present context, however, it is the concept of 'global history' which is under scrutiny rather than trans-regional historical studies per se, thereby making use of the specific term appropriate, if not exhaustive. Though the limitation of using only an English-language search term is clear, this author is not aware of a non-English-language department or significant body of scholarship which explicitly situates itself under the conceptual aegis of 'global history', but which produces its scholarship substantially in a different language. Indeed, the Anglo-American dominance within the development of global history as a sub-discipline is such that even initiatives originating outside the Anglophone world, such as the European Network in Universal and Global History, conducts its business primarily in English (<http://www.eniugh.org/>, accessed 15/04/2014). Presumably issues of shared language and collaboration also informed this decision. Moreover, with respect to the Google query above, primarily seeking to identify elements of 'global history' as a concept being taught in Indian universities, the use of English reflects the predominance of English as the language of higher education in Indian universities.

Roman studies to seek to carve out a role of great importance for long-distance trade in the ancient world, it is useful to establish a verifiable perspective on the later phase of trade. Understanding the superficial, though not culturally unimportant role which trade between the Mediterranean and the Indian Ocean played also enables this section of the Byzantine economy to be integrated into wider studies of the movement of staples and locally manufactured products, which constituted the bulk of Late Antique exchange. While Indo-Byzantine exchange may not have had a major impact on the Byzantine economy, using it as a vantage point from which to re-evaluate texts dealing with late Roman attitudes towards the east, especially the *Christian Topography*, compared here for the first time directly with the *Periplus of the Erythrean Sea*, demonstrates how the Christianisation of the Roman Empire altered conceptions of geography and space (at least for some authors) but did not fundamentally alter perceptions of India as the exotic and luxurious ‘other’.

Within Indian Ocean studies, this thesis contributes to an increasingly large body of scholarship seeking to refocus attention onto the internal structures of south India, rather than on external networks and connections. Albeit using a category of foreign object as a marker, the distribution of Byzantine copies in south India, and their imitation and modification reveals patterns of ritual and elite use, which provide a rare insight into the obscure history of south India in the fourth to seventh centuries. In addition to historical conclusions concerning the nature of Byzantine trade with India, this thesis also seeks to develop new methods, most importantly for dealing with numismatic evidence not just from the perspective of serialisation and categorisation, but also from the perspective of coins as unique objects of material culture. This is reflected both in the structure of the catalogue, which presents each coin as a single record rather than a series of types, and in

the analysis of coin finds from India. It is hoped that this approach will have application beyond the field of Indo-Byzantine studies and can contribute towards a fuller use of numismatic material in Byzantine history, especially in examining the interaction of Byzantine currency with the many cultures surrounding the empire. As in the case of south India and Askum, many of these interactions can no longer be viewed as contrasts between centre and periphery or as negotiations between greater and lesser powers. Byzantine coinage, as Lopez reflected in 1951, had a global appeal but not for the same reasons everywhere.



**INDO-BYZANTINE EXCHANGE, 4<sup>TH</sup> TO 7<sup>TH</sup> CENTURIES: A GLOBAL  
HISTORY**

**APPENDICES**

By

REBECCA R. DARLEY

Appendices to a thesis submitted to the  
University of Birmingham  
for the degree of  
DOCTOR OF PHILOSOPHY

Centre for Byzantine, Ottoman and Modern Greek Studies  
Classics, Ancient History and Archaeology  
College of Arts and Law  
University of Birmingham  
September 2013

## APPENDIX 1

### Catalogue of coin finds

#### A1.1 Format

The catalogue constitutes unpublished coins from the Madras Government Museum collection and the previously unpublished photographic record of the Akki Alur hoard from the collection of Peter Berghaus. In the discussion included in this thesis these coin finds are supplemented by data from published coins. Coins are given in the order of attributed emperor. Coins which cannot be attributed to a specific emperor either because of wear or because imitations echoed the style of Byzantine coinage without referencing a discernible model are listed last. Where possible coins are referenced according to the following catalogues: *Roman Imperial Coinage* vol. 10 (RIC X) or the *Catalogue of the Byzantine Coins in the Dumbarton Oaks Collection and the Whittemore Collection*, vol. 1 (DOC I). In cases where imitations are too schematic to be attributable to any prototype no catalogue number is given.

#### A1.2 Conventions and abbreviations

Conventions used within this catalogue conform to current numismatic practice. All weights and diameters are provided in grams and millimetres. Images from the Madras Government Museum are 1:1. Those from the Akki Alur hoard are not to scale. Latin abbreviations for metals are:

AV = gold

AR = silver

AE = copper

Collections are abbreviated as follows:

MGM = Madras Government Museum

Catalogues are abbreviated as follows:

DOC I = Bellinger, A. R. (1966) *Catalogue of the Byzantine coins in the Dumbarton Oaks collection and in the Whittemore collection*, volume 1, Washington, D.C.: Dumbarton Oaks Research Library and Collection.

RIC X = Carson, R. A. G., Kent, J. P. C. and Burnett, A. M. (1994) *The Roman Imperial Coinage*, vol. 10, *The Empire divided and the fall of the western parts, A.D. 395-491*, London: Spink.

Other abbreviations and conventions in coin descriptions:

{X} = suggested reading of an unclear character

[X] = suggested insertion where characters are missing


- = break in legend as part of coin design

*Off.* = *Officina*


Star = unless otherwise stated, eight-pointed star


### A1.3 Catalogue of coins

#### *Theodosius II (A.D. 408-50)*


<b>1</b> Theodosius II <i>Solidus</i> (?) <b>References:</b> Unpublished, Type RIC X.237	Weight Diameter Axis	AV 4.07 g. 20 mm 180°	
<b>Obv.</b> DNTHEODS SIVSPPAVC ¾ bust wearing helmet with plume, and diadem the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.			
<b>Rev.</b> SALVSREI PVBLICAES Theodosius II seated front, left foot on footstool. Valentinian III standing front, both in consular robes, holding <i>mappa</i> in right hand and long cross in left hand. Above them a star. CONO[B] in exergue.			
<b>Museum/Collection Reference:</b> Madras			


Government Museum 190
<b>Notes:</b> Two holes pierced obverse to reverse which appear to have been elongated by tearing. Red residue visible on obverse and reverse.

<b>2</b> Theodosius II (imitation) <i>Solidus</i> (?) <b>References:</b> Unpublished, Prototype probably RIC X.322	Weight Diameter Axis	AV 4.09 g. 19 mm 180°	
<b>Obv.</b> DNTHEODO IVPVAVC{C} $\frac{3}{4}$ bust wearing helmet with plume, and diadem the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.			
<b>Rev.</b> VOTXXX $\Lambda$ VLTXXXX Crude image of seated figure facing left, holding <i>globus cruciger</i> in right hand. Star in right field. [C]OIIOI in exergue.			
<b>Museum/Collection Reference:</b> Madras Government Museum 192			
<b>Notes:</b> Two holes punched from obverse to reverse. Red residue visible on obverse and reverse.			


<b>3</b> Theodosius II (imitation) <i>Solidus</i> <b>References:</b> Unpublished, Prototype probably RIC X.322	Weight Diameter Axis	AV 4.34 g. 19 mm 180°	
<b>Obv.</b> DIINTIPO OEIAPC $\frac{3}{4}$ bust wearing helmet with plume, and diadem the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.			
<b>Rev.</b> OTXXX MVLTXXXX Crude image of seated figure facing left, holding <i>globus cruciger</i> in right hand. Star in right field. [CO]IIO[B] in exergue.			
<b>Museum/Collection Reference:</b> Madras			
<b>Notes:</b> Two holes punched from obverse to reverse. Red residue visible on obverse and reverse.			


Government Museum 193
<b>Notes:</b> Two holes carefully punched from obverse to reverse. Cross scratched into obverse right field with wide implement, leaving parallel incisions. Red residue visible on reverse.

<b>4</b> Theodosius II (imitation?) <i>Solidus</i> <b>References:</b> Day (2012a) 1, Type, RIC X.322	Weight Diameter Axis	AV Unknown Unknown 180°	
<b>Obv.</b> DNTHEODO – [SI]VS PF AVG $\frac{3}{4}$ bust wearing helmet with plume, and diadem the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.			
<b>Rev.</b> IMPXXXXII COS – X VII PP Constantinopolis seated left, <i>globus cruciger</i> in right, holding spear upright with left hand, left foot rests on prow of a ship, star in lower left field. CONOB in exergue.			
<b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums.			
<b>Notes:</b> Akki Alur. Double pierced from obverse to reverse, scratch-mark in obverse right field, worn reverse die.			


<b>5</b> Theodosius II <i>Solidus</i> <b>References:</b> Day (2012a) 2, Type RIC X.257	Weight Diameter Axis	AV Unknown Unknown 180°	
<b>Obv.</b> DNTHEODO – [S]IVS PF AVG $\frac{3}{4}$ bust wearing helmet with plume, and diadem the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.			
<b>Rev.</b> VOT XXX – MVLT XXXX Constantinopolis seated left, <i>globus cruciger</i> in right hand, holding spear upright in left hand, left foot rests on prow of a ship, star in lower left field, round shield leans on throne, lower right. [CO]NO[B] in exergue.			


<b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums.	
<b>Notes:</b> Akki Alur. Double pierced from obverse to reverse.	


<b>6</b> Theodosius II (imitation?) <i>Solidus</i> <b>References:</b> Day (2012a) 3, Type RIC X.322	Weight Diameter Axis	AV Unknown Unknown 180°	
<b>Obv.</b> DNTHEODO[S] – [I]VS PF AVG ¾ bust wearing helmet with plume, and diadem the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.			
<b>Rev.</b> [M]PXXXXII COS – VII PP Constantinopolis seated left, <i>globus cruciger</i> in right hand, holding spear upright in left hand, left foot rests on prow of a ship, star in lower left field, round shield leans on throne, lower right. CON[OB] in exergue.			
<b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums.			
<b>Notes:</b> Akki Alur. Double pierced (direction unclear), very worn obverse die.			


<b>7</b> Theodosius II <i>Solidus</i> <b>References:</b> Day (2012a) 4, Type RIC X.202	Weight Diameter Axis	AV Unknown Unknown 180°	
<b>Obv.</b> DNTHEODO - SIVS PF AVG ¾ bust wearing helmet with plume, and diadem the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.			
<b>Rev.</b> CONCORDI – A AVCC S Constantinopolis seated facing, head to the right, crowning Victory on right hand, sceptre in left hand, left foot resting on prow of a ship, star in left field. CON[OB] in exergue. <i>Off. S</i>			
<b>Museum/Collection Reference:</b> Held by the			

Karnataka Directorate of Archaeology and Museums.
<b>Notes:</b> Akki Alur. Double pierced obverse to reverse.


<b>8</b> Theodosius II (imitation?) <i>Solidus</i> <b>References:</b> Day (2012a) 6, Type RIC X.322	Weight Diameter er Axis	AV Unknown Unknown 150 <sup>o</sup> ?	
<b>Obv.</b> DNTHEODOS - VIS PF AVG $\frac{3}{4}$ bust wearing helmet with plume, and diadem the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.			
<b>Rev.</b> MPXXXXII COS -XX VII PP Constantinopolis seated left, <i>globus cruciger</i> in right hand, holding spear upright in left hand, left foot rests on prow of a ship, star in lower left field, round shield leans on throne, lower right. CONOB in exergue.			
<b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums.			
<b>Notes:</b> Akki Alur. Scratch marks in lower right field.			


<b>9</b> Theodosius II <i>Solidus</i> <b>References:</b> Day (2012a) 7, Type RIC X.202	Weight Diameter Axis	AV Unknown Unknown Unknown	
<b>Obv.</b> DNTHEODO - SIVS PF AVG $\frac{3}{4}$ bust wearing helmet with plume, and diadem the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.			
<b>Rev.</b> CONCORDI - A AVCCC Constantinopolis seated facing, head to the right, crowning Victory on right hand, sceptre in left hand, left foot resting on prow of a ship, star in left field. CONOB in exergue.			
<b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums.			
<b>Notes:</b> Akki Alur. Deep crack on obverse die over diadem.			


<p><b>10</b> Theodosius II (imitation?) <i>Solidus</i> (?) <b>References:</b> Unpublished, Type RIC X, obverse prototype probably T1</p>	<p>Weight Diameter Axis</p>	<p>AV 5.54 g. 19 mm 180°</p>	
<p><b>Obv.</b> ΔΙΙΤΟΔΟΟ ΣΑΕΤΧΧΥ ¾ bust wearing helmet with plume, and diadem the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.</p>			
<p><b>Rev.</b> VICTORI XXXCCCI Crude winged Victory advancing left, holding long cross in right hand, star in right field. [CO]N[OB] in exergue</p>			
<p><b>Museum/Collection Reference:</b> Madras Government Museum 194</p>			
<p><b>Notes:</b> Two holes punched from obverse to reverse. Red residue visible on obverse and reverse. Appears to be a mule with official (blundered) obverse of Theodosius II (see Type, above) and but reverse (also blundered) from coin series of later emperors (from Marcian onwards).</p>			

<p><b>11</b> Theodosius II (imitation?) <i>Solidus</i> <b>References:</b> Day (2012a) 5, Type RIC X.232</p>	<p>Weight Diameter Axis</p>	<p>AV Unknown Unknown 0°</p>	
<p><b>Obv.</b> DNTHEOD[O] - SIVS PF AVG ¾ bust wearing helmet with plume, and diadem the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.</p>			
<p><b>Rev.</b> Rev. GLORIVI - TERRAR Emperor standing left holding banner in left hand, <i>globus cruciger</i> in right hand, star in left field.</p>			
<p><b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums.</p>			
<p><b>Notes:</b> Akki Alur. Double pierced from obverse to reverse.</p>			




<p><b>12</b> Theodosius II, imitation <i>Solidus</i> <b>References:</b> Day (2012a) 8, Type RIC X, obverse type T1</p>	<p>Weight Diameter Axis</p>	<p>AV Unknown Unknown 180°</p>	
<p><b>Obv.</b> DNTHEODO - SIVS PF AVG ¾ bust wearing helmet with plume, and diadem the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.</p>			
<p><b>Rev.</b> VICTORI – ΛΑΡCCC Θ Winged Victory advancing left, long cross in right hand, star in left field. [C]ON[O]B in exergue, <i>Off.</i> Θ</p>			
<p><b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums.</p>			
<p><b>Notes:</b> Akki Alur. Double pierced from obverse to reverse. Appears to be a mule with official obverse of Theodosius II (see Type, above) and but reverse from coin series of later emperors (from Marcian onwards).</p>			


<p><b>13</b> Theodosius II (imitation?) <i>Solidus</i> <b>References:</b> Day (2012a) 9, Type RIC X.219</p>	<p>Weight Diameter Axis</p>	<p>AV Unknown Unknown 180°</p>	
<p><b>Obv.</b> DNTHEOD[O – [SI]VS PF AVG ¾ bust wearing helmet with plume, and diadem the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.</p>			
<p><b>Rev.</b> VOT XX- MVLT XXX Winged Victory advancing left, long cross in right hand. [CO]NO[B] in exergue.</p>			
<p><b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums.</p>			
<p><b>Notes:</b> Akki Alur. Double pierced (direction unclear).</p>			


<b>14</b> Theodosius II (?) <i>Solidus</i> (?) <b>References:</b> Unpublished, too damaged to assign type	Weight Diameter Axis	AV unknown 19 mm 180°	
<b>Obv.</b> SIVSPPAVC ¾ bust wearing helmet with plume, and diadem, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.			
<b>Rev.</b> AAVCCC Design unclear. [C]ON[OB] in exergue.			
<b>Museum/Collection Reference:</b> Madras Government Museum 423/c/n423			
<b>Notes:</b> In three pieces – appears to have been cleanly sliced or chiselled. Two holes pierced from obverse to reverse. Found at Coimbatore Dharapuram, Kolattpalayam.			

#### *Marcian (A.D. 450-7)*


<b>15</b> Marcian <i>Solidus</i> <b>References:</b> Unpublished Type RIC X.508	Weight Diameter Axis	AV 4.34 g. 20 mm 180°	
<b>Obv.</b> DNMARCIA NVSPFAVC ¾ bust wearing helmet with plume, and diadem the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.			
<b>Rev.</b> VICTORI AAVCCCI Winged Victory advancing left, holding long cross in right hand, star in right field. CONOB in exergue.			
<b>Museum/Collection Reference:</b> Madras Government Museum 197			
<b>Notes:</b> Two holes pierced from obverse to reverse. Deep scratch in obverse right field.			


<b>16</b> Marcian <i>Solidus</i>	Weight Diameter	AV 4.32 g. 20 mm	
--	--------------------	------------------------	--


<b>References:</b> Unpublished, Type RIC X.508	Axis	180°	
<b>Obv.</b> DNMARCIA [N]VSPFAVC ¾ bust wearing helmet with plume, and diadem the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.			
<b>Rev.</b> VICTORI AAVCCCI Winged Victory advancing left, holding long cross in right hand, star in right field. CONO[B] in exergue.			
<b>Museum/Collection Reference:</b> Madras Government Museum 198			
<b>Notes:</b> Two holes pierced carefully (unclear from which side).			

<b>17</b> Marcian (imitation?) <i>Solidus</i> <b>References:</b> Day (2012a) 10, Type probably RIC X.508	Weight Diameter Axis	AV Unknown Unknown 180°	
<b>Obv.</b> DNMARCIO - VOIPPAVC ¾ bust wearing helmet with plume, and diadem the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.			
<b>Rev.</b> VICTORI – AVVCCC H Winged Victory advancing left, long cross in right hand, star in right field. [C]ONO[B] in exergue. <i>Off.</i> H			
<b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums.			
<b>Notes:</b> Akki Alur. Double pierced from obverse to reverse.			


<b>18</b> Marcian <i>Solidus</i> <b>References:</b> Day (2012a) 11, Type RIC X.508	Weight Diameter Axis	AV Unknown Unknown 180°	
---	----------------------------	----------------------------------	--

<p><b>Obv.</b> DN MARCIA – NVS PFAVG  <math>\frac{3}{4}</math> bust wearing helmet with plume, and diadem the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.</p>	
<p><b>Rev.</b> VICTORI – ΛVCCCH  Winged Victory advancing left, long cross in right hand, star in right field. CONOB in exergue. <i>Off.</i> H</p>	
<p><b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums.</p>	
<p><b>Notes:</b> Akki Alur. Double pierced from obverse to reverse.</p>	


<p><b>19</b>  Marcian (imitation?)  <i>Solidus</i>  <b>References:</b> Day (2012a) 12, Type probably RIC X.508</p>	<p>Weight  Diameter  Axis</p>	<p>AV  Unknown  Unknown  180°</p>	
<p><b>Obv.</b> DN MARC [IA – N] VS ΛVC  <math>\frac{3}{4}</math> bust wearing helmet with plume, and diadem the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.</p>			
<p><b>Rev.</b> VICTORI – ΛVCCCH A  Winged Victory advancing left, long cross in right hand, star in right field. [CO]NO[B] in exergue. <i>Off.</i> A</p>			
<p><b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums.</p>			
<p><b>Notes:</b> Akki Alur. Double pierced from obverse to reverse.</p>			

<p><b>20</b>  Marcian  <i>Solidus</i>  <b>References:</b> Day (2012a) 13, Type RIC X.508</p>	<p>Weight  Diameter  Axis</p>	<p>AV  Unknown  Unknown  Unknown</p>	
<p><b>Obv.</b> DN MARCIA – NVS PPAVG  <math>\frac{3}{4}</math> bust wearing helmet with plume, and diadem with trefoil ornament, the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On</p>			


left shoulder, shield with device of horseman right, spearing fallen foe.	
<b>Rev.</b> VICTORI – AAVCCC Γ Winged Victory advancing left, long cross in right hand, star in right field. CONOB in exergue. <i>Off.</i> Γ	
<b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums.	
<b>Notes:</b> Akki Alur. Deep scratch marks in obverse right field.	


<b>21</b> Marcian <i>Solidus</i> <b>References:</b> Day (2012a) 14, Type RIC X.508	Weight Diameter Axis	AV Unknown Unknown 180°	
<b>Obv.</b> DN MAR[CI]A – [N]VS PFAVC ¾ bust wearing helmet with plume, and diadem with trefoil ornament, the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.			
<b>Rev.</b> [VI]CTORI – AAVCCC Δ Winged Victory advancing left, long cross in right hand, star in right field. CON[OB] in exergue. <i>Off.</i> Δ			
<b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums.			
<b>Notes:</b> Akki Alur. Double pierced from obverse to reverse (very large holes), scratch-mark in obverse right field. Deep cracks at ten and four o'clock on reverse die.			

**Leo I (A.D. 457-74)**

<b>22</b> Leo I <i>Solidus</i> <b>References:</b> Day (2012a) 15, Type RIC X.605	Weight Diameter Axis	AV Unknown Unknown 180°	
<b>Obv.</b> DN LEO PE – RPET AVC ¾ bust wearing helmet with plume, and diadem with trefoil ornament, the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.			
<b>Rev.</b> [VI]CTORI – AAVCCC H Winged Victory advancing left, long cross in right			


hand, star in right field. CONOB in exergue. <i>Off.</i> H	
<b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums.	
<b>Notes:</b> Akki Alur. Double pierced from obverse to reverse.	


<b>23</b> Leo I <i>Solidus</i> <b>References:</b> Day (2012a) 16, Type RIC X.605	Weight Diameter Axis	AV Unknown Unknown 180°	
<b>Obv.</b> DN LEO PE – RPET AVC ¾ bust wearing helmet with plume, and diadem with trefoil ornament, the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.			
<b>Rev.</b> [VI]CTORI – AAVCCC I Winged Victory advancing left, long cross in right hand, star in right field. [CO]NO[B] in exergue. <i>Off.</i> I			
<b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums.			
<b>Notes:</b> Akki Alur. Double pierced from obverse to reverse. Scratch mark in obverse right field.			


<b>24</b> Leo I <i>Solidus</i> <b>References:</b> Day (2012a) 17, Type RIC X.605	Weight Diameter Axis	AV Unknown Unknown 180°	
<b>Obv.</b> DN LEOPE – RPET AVC ¾ bust wearing helmet with plume, and diadem with trefoil ornament, the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.			
<b>Rev.</b> [VI]CTORI – AAVCCC Winged Victory advancing left, long cross in right hand, star in right field. CON[OB] in exergue.			
<b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums.			
<b>Notes:</b> Akki Alur. Double pierced from obverse to reverse. Possibly double-struck,			




mangled reverse die at bottom.

<p><b>25</b> Leo I <i>Solidus</i> <b>References:</b> Day (2012a) 18, Type RIC X.605</p>	<p>Weight Diameter Axis</p>	<p>AV Unknown Unknown 180°</p>	
<p><b>Obv.</b> DN LEOPE – RPET AVC ¾ bust wearing helmet with plume, and diadem with trefoil ornament, the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.</p>			
<p><b>Rev.</b> [VI]CTORI – AAVCCC B Winged Victory advancing left, long cross in right hand, star in right field. [C]ONO[B] in exergue. <i>Off.</i> B</p>			
<p><b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums.</p>			
<p><b>Notes:</b> Akki Alur. Double pierced from obverse to reverse, scratch-mark in obverse right field.</p>			

<p><b>26</b> Leo I <i>Solidus</i> <b>References:</b> Day (2012a) 19, Type RIC X.605</p>	<p>Weight Diameter Axis</p>	<p>AV Unknown Unknown 180°</p>	
<p><b>Obv.</b> DN LEO PE – [RP]ET AVC ¾ bust wearing helmet with plume, and diadem with trefoil ornament, the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.</p>			
<p><b>Rev.</b> [VI]CTORI – AAVCCC A Winged Victory advancing left, long cross in right hand, star in right field. CON[O]B in exergue. <i>Off.</i> A</p>			
<p><b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums.</p>			
<p><b>Notes:</b> Akki Alur. Double pierced (direction unclear).</p>			


<b>27</b> Leo I <i>Solidus</i> <b>References:</b> Day (2012a) 21, Type RIC X.605	Weight Diameter Axis	AV Unknown Unknown Unknown	
<b>Obv.</b> DN LEOPE – RPET AVC $\frac{3}{4}$ bust wearing helmet with plume, and diadem with trefoil ornament, the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.			
<b>Rev.</b> VICTORI – AAVCCC B Winged Victory advancing left, long cross in right hand, star in right field. CONOB in exergue. <i>Off.</i> B			
<b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums.			
<b>Notes:</b> Akki Alur. Worn obverse die, scratch-mark in obverse right field and left field.			


<b>28</b> Leo I <i>Solidus</i> <b>References:</b> Day (2012a) 22, Type RIC X.605	Weight Diameter Axis	AV Unknown. Unknown Unknown	
<b>Obv.</b> DN LEOPE – RPET AVC $\frac{3}{4}$ bust wearing helmet with plume, and diadem with trefoil ornament, the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.			
<b>Rev.</b> VICTORI – AAVCCC Γ Winged Victory advancing left, long cross in right hand, star in right field. CONOB in exergue. <i>Off.</i> Γ			
<b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums.			

### Zeno (A.D. 474-91)


<b>29</b> Zeno <i>Solidus</i> <b>References:</b> Unpublished, Type RIC	Weight Diameter Axis	AV 4.37 g. 29 mm 180°	
--	----------------------------	--------------------------------	--





X.910		
<p><b>Obv.</b> DNZENO PERPAVC  <math>\frac{3}{4}</math> bust wearing helmet with plume, and diadem the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.</p>		
<p><b>Rev.</b> VICTORI AAVCCC  Winged Victory advancing left, holding long cross in right hand, star in right field. [CO]NO[B] in exergue. <i>B officina.</i></p>		
<p><b>Museum/Collection Reference:</b> Madras Government Museum 158</p>		
<p><b>Notes:</b> Two holes pierced carefully.</p>		

<p><b>30</b>  Zeno (imitation)  <i>Solidus</i>  <b>References:</b>  Unpublished, Type RIC X.910</p>	<p>Weight  Diameter  Axis</p>	<p>AV  4.46 g.  19 mm  180°</p>	
<p><b>Obv.</b> DNZENO [P]ERPAVC  <math>\frac{3}{4}</math> bust wearing helmet with plume, and diadem the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe. Two pellets in right field.</p>			
<p><b>Rev.</b> VICTORI AAVCCC  Winged Victory advancing left, holding long cross in right hand, star in right field. [CO]NO[B] in exergue. <i>H officina.</i></p>			
<p><b>Museum/Collection Reference:</b> Madras Government Museum 169</p>			
<p><b>Notes:</b> Two widely-spaced holes pierced from obverse to reverse. Very significant die cracking on reverse.</p>			


<p><b>31</b>  Zeno  <i>Solidus</i>  <b>References:</b> Day (2012a) 38, Type RIC X, obverse</p>	<p>Weight  Diameter  Axis</p>	<p>AV  Unknown  Unknown  Unknown</p>	
--	---------------------------------------	--	--

type Z1			
<p><b>Obv.</b> DN ZENO - PERPAVC  <math>\frac{3}{4}</math> bust wearing helmet with plume, and diadem with trefoil ornament, the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.</p>			
<p><b>Rev.</b> IMAGE MISSING</p>			
<p><b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums.</p>			
<p><b>Notes:</b> Akki Alur.</p>			


<p><b>32</b>  Zeno  <i>Solidus</i>  <b>References:</b> Day (2012a) 39, Type RIC X, obverse type Z1</p>	<p>Weight  Diameter  Axis</p>	<p>AV  Unknown  Unknown  Unknown</p>	
<p><b>Obv.</b> DN ZENO - PERPAVC  <math>\frac{3}{4}</math> bust wearing helmet with plume, and diadem with trefoil ornament, the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.</p>			
<p><b>Rev.</b> IMAGE MISSING</p>			
<p><b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums.</p>			
<p><b>Notes:</b> Akki Alur. Very worn obverse die.</p>			

<p><b>33</b>  Zeno  <i>Solidus</i>  <b>References:</b> Day (2012a) 40, Type RIC X, obverse type Z1</p>	<p>Weight  Diameter  Axis</p>	<p>AV  Unknown  Unknown  Unknown</p>	
<p><b>Obv.</b> DN Z[reversed]ENO - PERPAVC  <math>\frac{3}{4}</math> bust wearing helmet with plume, and diadem with trefoil ornament, the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.</p>			


<b>Rev. IMAGE MISSING</b>	
<b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums.	
<b>Notes:</b> Akki Alur. Die crack/flaw in obverse left field.	


<b>34</b> Zeno <i>Solidus</i> <b>References:</b> Day (2012a) 41, Type RIC X, obverse type Z1	Weight Diameter Axis	AV Unknown Unknown Unknown	
<b>Obv. DN ZENO - PERPAVC</b> ¾ bust wearing helmet with plume, and diadem with trefoil ornament, the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.			
<b>Rev. IMAGE MISSING</b>			
<b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums.			
<b>Notes:</b> Akki Alur.			


*Anastasius I (A.D. 491-518)*


<b>35</b> Anastasius I (imitation) <i>Solidus</i> <b>References:</b> Unpublished, Type DOC I.3i	Weight Diameter Axis	AV 4.22 g. mm 180°	
<b>Obv. DNANASTA SIVSPPAVC</b> ¾ bust wearing helmet with plume, and diadem the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.			
<b>Rev. VICTORI AVCCC</b> Winged Victory advancing left, holding long cross in right hand, star in right field. [C]ONO[B] in exergue. <i>I officina</i>			
<b>Museum/Collection Reference:</b> Madras Government Museum 807			


**Notes:** Scratches in obverse right field in cross shape and in reverse right field. Two holes carefully pierced. Found at Ramnad-Sattur, Tammanayamaichampatty (TN). Damage visible on die. Red residue visible on reverse.


<b>36</b> Anastasius I <i>Solidus</i> <b>References:</b> Unpublished, Type DOC I.3f	Weight Diameter Axis	AV 4.56 g. 19 mm 180°	
<b>Obv.</b> DNANAT[A] [S]IVSPPAVC ¾ bust wearing helmet with plume, and diadem the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.			
<b>Rev.</b> VICTORI AAVCCC Winged Victory advancing left, holding long cross in right hand, star in right field. C[O]NO[B] in exergue. <i>S officina</i>			
<b>Museum/Collection Reference:</b> Madras Government Museum 170			
<b>Notes:</b> Two holes punched from obverse to reverse. Scratches in obverse field.			

<b>37</b> Anastasius I <i>Solidus</i> <b>References:</b> Day (2012a) 23, Type DOC I.3b	Weight Diameter Axis	AV Unkown Unknown Unknown	
<b>Obv.</b> DN ANASTA - SIVSPPAVC ¾ bust wearing helmet with plume, and diadem with trefoil ornament, the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.			
<b>Rev.</b> VICTORI – AAVCCC B Winged Victory advancing left, long cross in right hand, star in right field. CONOB in exergue. <i>Off. B</i>			
<b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums.			
<b>Notes:</b> Akki Alur			


<b>38</b> Anastasius I <i>solidus</i> <b>References:</b> Day (2012a) 24, Type DOC I.7h.1-2	Weight Diameter Axis	AV Unknown Unknown Unknown	
<b>Obv.</b> DN ANASTA - SIVSPPAVC $\frac{3}{4}$ bust wearing helmet with plume, and diadem with trefoil ornament, the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.			
<b>Rev.</b> VICTORI – AAVCCC H Winged Victory advancing left, long cross in right hand, star in left field. CONOB in exergue. <i>Off.</i> H			
<b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums.			
<b>Notes:</b> Akki Alur			


<b>39</b> Anastasius I <i>Solidus</i> <b>References:</b> Day (2012a) 25, Type DOC I.3g	Weight Diameter Axis	AV Unknown Unknown Unknown	
<b>Obv.</b> DN ANASTA - SIVSPPAVC $\frac{3}{4}$ bust wearing helmet with plume, and diadem with trefoil ornament, the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.			
<b>Rev.</b> VICTORI – AAVCCC H Winged Victory advancing left, long cross in right hand, star in right field. CON[OB] in exergue. <i>Off.</i> H			
<b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums.			
<b>Notes:</b> Akki Alur.			

<b>40</b> Anastasius I <i>Solidus</i> <b>References:</b> Day (2012a) 26, Type DOC I.3g	Weight Diameter Axis	AV Unknown Unknown Unknown	
<b>Obv.</b> DN ANASTA - SIVSPPAVC ¾ bust wearing helmet with plume, and diadem with trefoil ornament, the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.			
<b>Rev.</b> VICTORI – AAVCCC H Winged Victory advancing left, long cross in right hand, star in right field. CONOB in exergue. <i>Off.</i> H			
<b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums.			
<b>Notes:</b> Akki Alur			

<b>41</b> Anastasius I <i>Solidus</i> <b>References:</b> Day (2012a) 27, Type DOC I.7b	Weight Diameter Axis	AV Unknown Unknown 180°	
<b>Obv.</b> DN ANASTA - SIVSPPAVC ¾ bust wearing helmet with plume, and diadem with trefoil ornament, the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.			
<b>Rev.</b> VICTORI – AAVCCC B Winged Victory advancing left, long cross in right hand, star in right field. [C]ONO[B] in exergue. <i>Off.</i> B			
<b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums.			
<b>Notes:</b> Akki Alur. Double pierced from obverse to reverse.			


<b>42</b> Anastasius I <i>Solidus</i> <b>References:</b> Day (2012a)	Weight Diameter Axis	AV Unknown Unknown Unknown	
---	----------------------------	-------------------------------------	--


28, Type DOC I.3i.2			
<p><b>Obv.</b> DN ANASTA - SIVSPPAVC  <math>\frac{3}{4}</math> bust wearing helmet with plume, and diadem with trefoil ornament, the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.</p>			
<p><b>Rev.</b> VICTORI – AAVCCC I  Winged Victory advancing left, long cross in right hand, star in right field.  CONOB in exergue. <i>Off.</i> I</p>			
<p><b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums.</p>			
<p><b>Notes:</b> Akki Alur. Worn reverse die.</p>			


<b>43</b> Anastasius I <i>Solidus</i> <b>References:</b> Day (2012a) 29, Type DOC I.7b	Weight Diameter Axis	AV Unknown Unknown Unknown	
<p><b>Obv.</b> DN ANASTA - SIVSPPAVC  <math>\frac{3}{4}</math> bust wearing helmet with plume, and diadem with trefoil ornament, the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.</p>			
<p><b>Rev.</b> VICTORI – AAVCCC B  Winged Victory advancing left, long cross in right hand, eight-pointed star in left field, with pellet at centre.  CONOB in exergue. <i>Off.</i> B</p>			
<p><b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums.</p>			
<p><b>Notes:</b> Akki Alur.</p>			

<b>44</b> Anastasius I <i>Solidus</i> <b>References:</b> Day (2012a) 30, Type DOC I.3c	Weight Diameter Axis	AV Unknown Unknown Unknown	
<p><b>Obv.</b> DN ANASTA - SIVSPPAVC</p>			




<p>¾ bust wearing helmet with plume, and diadem with trefoil ornament, the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.</p>	
<p><b>Rev.</b> VICTORI – ΛΑΥCCC Γ Winged Victory advancing left, long cross in right hand, star in right field. CONOB in exergue. <i>Off.</i> Γ</p>	
<p><b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums.</p>	
<p><b>Notes:</b> Akki Alur. Reverse badly scratched. Possibly imitation.</p>	


<p><b>45</b> Anastasius I (imitation?) <i>Solidus</i> <b>References:</b> Day (2012a) 31, Type DOC I.3i2</p>	<p>Weight Diameter Axis</p>	<p>AV Unknown Unknown 180°</p>	
<p><b>Obv.</b> DN ANAST[A] – [S]IVSPPAVC ¾ bust wearing helmet with plume, and diadem with trefoil ornament, the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.</p>			
<p><b>Rev.</b> VICTORI – AAVCCC I Winged Victory advancing left, long cross in right hand, six-pointed star in right field. [C]ON[O]B in exergue. <i>Off.</i> I</p>			
<p><b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums.</p>			
<p><b>Notes:</b> Akki Alur. Double pierced from obverse to reverse. Scratch mark in obverse right field.</p>			

<p><b>46</b> Anastasius I Denomination <b>References:</b> Day (2012a) 32, Type DOC I.3a</p>	<p>Weight Diameter Axis</p>	<p>AV Unknown Unknown 180°</p>	
<p><b>Obv.</b> DN ANASTA - SIVSPPAVC ¾ bust wearing helmet with plume, and diadem with trefoil ornament, the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On</p>			





left shoulder, shield with device of horseman right, spearing fallen foe.	
<b>Rev.</b> VICTORI – AAVCCC A Winged Victory advancing left, long cross in right hand, star in right field. C[O]NO[B] in exergue. <i>Off.</i> A	
<b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums.	
<b>Notes:</b> Akki Alur. Double pierced from obverse to reverse. Scratch mark in obverse right field.	

<b>47</b> Anastasius I <i>Solidus</i> <b>References:</b> Day (2012a) 33, Type DOC I.7c	Weight Diameter Axis	AV Unknown Unknown Unknown	
<b>Obv.</b> DN AAASTA - SIVSPPAVC $\frac{3}{4}$ bust wearing helmet with plume, and diadem with trefoil ornament, the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.			
<b>Rev.</b> VICTORI – AAVCCC Γ Winged Victory advancing left, long cross in right hand, star in left field with pellet in centre. CONOB in exergue. <i>Off.</i> Γ			
<b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums. <b>Notes:</b> Akki Alur.			


<b>48</b> Anastasius I <i>Solidus</i> <b>References:</b> Day (2012a) 34, Type DOC I.7c	Weight Diameter Axis	AV Unknown Unknown Unknown	
<b>Obv.</b> DN ANASTA - SIVSPPAVC $\frac{3}{4}$ bust wearing helmet with plume, and diadem with trefoil ornament, the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.			
<b>Rev.</b> VICTORI – AAVCCC Γ			

Winged Victory advancing left, long cross in right hand, star in left field with pellet in centre. CONOB in exergue. <i>Off.</i> Γ	
<b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums.	
<b>Notes:</b> Akki Alur.	


<b>49</b> Anastasius I (imitation) <i>Solidus</i> <b>References:</b> Day (2012a) 35, Type DOC I.3f	Weight Diameter Axis	AV Unknown Unknown Unknown	
<b>Obv.</b> DN ANASTA - 2I[inverted A]SPPA[inverted A]C $\frac{3}{4}$ bust wearing helmet with plume, and diadem with trefoil ornament, the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.			
<b>Rev.</b> VICTORI – AAVCCC S Winged Victory advancing left, long cross in right hand, six-pointed star in right field. CONOB in exergue. <i>Off.</i> S			
<b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums.			
<b>Notes:</b> Akki Alur, probably imitation.			


<b>50</b> Anastasius I <i>Solidus</i> <b>References:</b> Day (2012a) 36, Type DOC I.3i.2	Weight Diameter Axis	AV Unknown Unknown Unknown	
<b>Obv.</b> DN ANASTA - SIVSPPAVC $\frac{3}{4}$ bust wearing helmet with plume, and diadem with trefoil ornament, the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.			
<b>Rev.</b> VICTORI – AAVCCC I Winged Victory advancing left, long cross in right hand, star in right field. CONOB in exergue. <i>Off.</i> I			


<b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums.	
<b>Notes:</b> Akki Alur. Scratch mark in obverse left field.	

<b>51</b> Anastasius I <i>Solidus</i> <b>References:</b> Day (2012a) 37, Type DOC I.3h	Weight Diameter Axis	AV Unknown Unknown Unknown	
<b>Obv.</b> DN ANASTA – SIVSPPAVC ¾ bust wearing helmet with plume, and diadem with trefoil ornament, the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder.			
<b>Rev.</b> VICTORI – AAVCCC B Winged Victory advancing left, long cross in right hand, star in right field. CONOB in exergue. <i>Off.</i> B			
<b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums.			
<b>Notes:</b> Akki Alur.			

*Justin I (A.D. 518-27)*


<b>52</b> Justin I (imitation) <b>References:</b> Unpublished, not attributable to prototype, but possibly DOC I.3 (semissis)	Weight Diameter Axis	AV 2.03 g. 17 mm 180°	
<b>Obv.</b> {D}NIV{S} VV ¾ bust wearing helmet with plume, and diadem the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.			
<b>Rev.</b> VICTORR B Figure seated facing left holding long cross. Star in left field. CONAB in exergue.			
<b>Museum/Collection Reference:</b> Madras Government Museum 169/163			
<b>Notes:</b> Nib of metal at top appears to have been folded down on each side but may originally have formed a loop for suspension.			

<b>53</b> Justin I <i>Solidus</i> <b>References:</b> Unpublished, Type DOC I.1g	Weight Diameter Axis	AV 4.47 g. 20 mm 180°	
<b>Obv.</b> DNIVSTI NVSPPAVC ¾ bust wearing helmet with plume, and diadem the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.			
<b>Rev.</b> VICTORI AAVCCC Winged Victory advancing left, holding long cross in right hand, star in right field. CONOB in exergue. ☉ <i>officina</i>			
<b>Museum/Collection Reference:</b> Madras Government Museum 206			
<b>Notes:</b> Scratch marks in obverse right field. Red residue visible on obverse. Heavy die wear on obverse.			


<b>54</b> Justin I <i>Solidus</i> <b>References:</b> Day (2012a) 43, Type DOC I.1-2	Weight Diameter Axis	AV Unknown Unknown Unknown	
<b>Obv.</b> DN IVSTI - NVSPPAVC ¾ bust wearing helmet with plume, and diadem with trefoil ornament, the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder.			
<b>Rev.</b> IMAGE MISSING			
<b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums.			
<b>Notes:</b> Akki Alur. Double pierced (direction unclear), very worn obverse die with deep crack in right field, die flaw over bust, die-wear lines distort inscription.			

*Justinian I (A.D. 527-65)*


55		AV	
----	--	----	--


Justinian I (?) (imitation) <i>Solidus</i> <b>References:</b> Unpublished, Type DOC I.3c	Weight Diameter Axis	4.46 g. 21 mm 180°	
<b>Obv.</b> DNIVSTINI ANVSPPAVC $\frac{3}{4}$ bust wearing helmet with plume, and diadem the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.			
<b>Rev.</b> VICTORI AAVCCCS Front facing winged Victory holding long cross in left hand and <i>globus cruciger</i> in right hand. CONOB in exergue.			
<b>Museum/Collection Reference:</b> Madras Government Museum 208 – New Delhi Loan			
<b>Notes:</b> Very heavy die wear visible on obverse and reverse and die crack on obverse bust.			


*Imitations (no identifiable attribution)*

<b>56</b> Imitation (no emperor attributable) <b>References:</b> Unpublished	Weight Diameter Axis	AV 7.03 g. 25 mm Uniface	
<b>Obv.</b> Right facing profile bust in dotted border. Marks surrounding bust may suggest lettering in left field but are illegible. Flan much larger than design.			
<b>Rev.</b> Smooth and blank with indentation of two slashes visible and perforation from one slash mark.			
<b>Museum/Collection Reference:</b> Madras Government Museum 184			
<b>Notes:</b> Two holes punched from obverse to reverse. Three parallel, vertical chisel marks, one cutting through the coin. Red residue visible on obverse.			


<b>57</b> Imitation (no emperor attributable) <b>References:</b> Unpublished	Weight Diameter Axis	AV 0.6 g. 22 mm Uniface	
---	----------------------------	----------------------------------	--


<p><b>Obv.</b> Vague impression of standing figure holding spear/banner/staff in left hand. In dotted border. Shapes suggesting a legend but illegible.</p>	
<p><b>Rev.</b> Negative impression of the obverse design.</p>	
<p><b>Museum/Collection Reference:</b> Madras Government Museum 196</p>	
<p><b>Notes:</b> Attributed by museum to Valentinian. Pierced twice from obverse to reverse. Very poor alloy.</p>	

<p><b>58</b> Imitation (no emperor attributable) <b>References:</b> Unpublished</p>	<p>Weight Diameter Axis</p>	<p>AV 0.7 g. 16 mm 180°</p>	
<p><b>Obv.</b> PVA DPAVI Facing bust wearing helmet with plume, and diadem and cuirass. Right hand holds spear behind head. On left shoulder, shield, device unclear.</p>			
<p><b>Rev.</b> A V A Winged, seated figure, head turned to left, holding long cross in left hand. Some letters visible but legend illegible.</p>			
<p><b>Museum/Collection Reference:</b> Madras Government Museum 195</p>			
<p><b>Notes:</b> Attributed by museum to Valentinian. Foil imitation. Red residue visible on obverse.</p>			

<p><b>59</b> Imitation (no emperor attributable) <i>Solidus</i> <b>References:</b> Unpublished</p>	<p>Weight Diameter Axis</p>	<p>AV 4.4 g. 21 mm 180°</p>	
<p><b>Obv.</b> DIILROI P PETAVC ¾ bust wearing helmet with plume, and diadem the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.</p>			
<p><b>Rev.</b> VICTORIA AAVCCC Winged Victory advancing left, holding long cross in right hand, star in right field. COIOB</p>			
<p><b>Museum/Collection Reference:</b> Madras</p>			


Government Museum 207	
<b>Notes:</b> Tw holes pierced from obverse to reverse	

<b>60</b> Imitation (no emperor attributable) <b>References:</b> Unpublished	Weight Diameter Axis	AV 0.57 g. 17 mm Uniface	
<b>Obv.</b> ΒΟΘΘΗ ΙΑΚΥΗΘ			
¾ bust wearing helmet with plume, and diadem and cuirass. Right hand holds spear behind head.			
<b>Rev.</b> Negative impression of obverse design.			
<b>Museum/Collection Reference:</b> Madras Government Museum 181			
<b>Notes:</b> Hole in portrait seems to be a tear from striking rather than a piercing. Red residue visible on obverse and reverse.			

<b>61</b> Imitation (no emperor attributable) <i>Solidus</i> <b>References:</b> Day (2012a) 20	Weight Diameter Axis	AV Unknown Unknown 180°	
<b>Obv.</b> ΕΘΙΓΕΘΩ - SPETAV			
¾ bust wearing helmet with plume, and diadem with trefoil ornament, the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.			
<b>Rev.</b> ΚΟΙΝΟΥΔΙ – ΑΑΥΚΚ Ι			
Constantinopolis seated right, star in right field, crowning Victory in right hand. CON[O]B in exergue. <i>Off.</i> I			
<b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums.			
<b>Notes:</b> Akki Alur. Double pierced from obverse to reverse.			

<b>62</b> Imitation (no emperor	Weight	AV Unknown	
------------------------------------	--------	---------------	--



attributable) Denomination <b>References:</b> Day (2012a) 42	Diameter Axis	Unknown Unknown	
<p><b>Obv.</b> ⲬΒ[reversed]HVRϢϢ - VSPEAVC  <math>\frac{3}{4}</math> bust wearing helmet with plume, and diadem, the ties of which show to left, tunic and cuirass. Right hand holds spear behind head. On left shoulder, shield with device of horseman right, spearing fallen foe.</p>			
<p><b>Rev.</b> IMAGE MISSING</p>			
<p><b>Museum/Collection Reference:</b> Held by the Karnataka Directorate of Archaeology and Museums.</p>			
<p><b>Notes:</b> Akki Alur. Double pierced from obverse to reverse.</p>			



## APPENDIX 2

## Glossary

<b>Term</b>	<b>Definition</b>
<i>Aureus</i> (pl. <i>Aurei</i> )	Standard gold denomination issued by the Roman state from first century B.C. until it was replaced in the early fourth century by the <i>solidus</i> . It was worth 25 silver <i>denarii</i> , though periods of high inflation impacted severely upon this relationship. Its initial weight of 8g was reduced by Nero in A.D. 63-4 to 7.30g, and by the reign of Caracalla (r. A.D. 198-217), its weight had fallen to 6.5g.
<i>Axis</i>	Orientation of the obverse and reverse types, usually described by clock hours, arrows or degrees indicating the reverse in relation to the obverse with the type viewed upright. Thus if the axis is described as 6 [o'clock]/180°↓, when the obverse type is viewed upright, the reverse type will be upside down.
<i>Bracteate</i>	Thin piece of metal, usually round and fashioned in the style of a coin, but intended for decorative purposes. Most bracteates have decoration on only one side (see <i>uniface</i> below), though some bracteates fashioned after Late Antique Roman coins have decoration on both sides.
<i>Brahmi</i>	Script used to write a variety of dialects throughout India, including Tamil. It spreading from the northwest to the south from the Mauryan period (322-185 B.C.). It is an abugida (using syllabic representations and diacritics to modify vowels) read from left to right, or occasionally, from right to left.
<i>Bust</i> ( <i>facing, three-quarter, profile</i> )	Image of a person (real or imagined), depicted from the chest up, showing the shoulders. Either depicted <i>facing</i> (at 180° to the viewer, usually on Late Antique coins, with little effort at perspective), <i>three-quarter</i> (with the face and shoulders turned slightly away from the viewer, to right or left, so that an element of profile can be seen), or <i>profile</i> (side-on to the viewer and the dominant form on Roman imperial coinage up to the fourth century).

<i>Cankam</i>	Tamil term meaning ‘group/association/academy. Often used in south Indian studies to referent to a semi-mythical early historical period in which associations of peripatetic poets defined the cultural life of the peninsula. See chapter seven for further discussion.
<i>Control Mark</i>	Mark, usually found in the field of a coin, which cannot be demonstrated to be a mint or moneyer’s mark, but which may reasonably be regarded as having had some purpose for identifying and thereby controlling some feature of the coinage.
<i>Cuirass</i>	Armoured chest-plate worn by soldiers in the Late Antique period, and sometimes depicted on the imperial bust on coins.
<i>Diadem</i>	Jewelled headdress (distinct from a crown), often depicted on the bust of emperors, co-emperors or other figures on Late Antique coins.
<i>Die</i>	Tool, upon which the design of a coin face is carved, usually in steel or iron. A die-struck coin is struck using a pair of dies. The reverse die was fixed, probably in something resembling an anvil. The obverse die was hand-held, with the design carved into the end of a shaft. The <i>flan</i> (see below) is placed on the lower die, the upper die is placed above and a hammer is used to impress the design.
<i>Double strike</i>	Coin upon which the image is distorted owing to the die-striker hesitating, and thereby performing an imperfect first strike, creating a shallow impression, then re-striking harder to imprint the image fully.
<i>Fabric</i>	Physical form of the coin, concerning the quality and feel of the metal, the depth and style of the design and other physical features of the coin related to its production or material.
<i>Field</i>	Blank area of the die surrounding the main type on each face.
<i>Flan</i>	Piece of metal, cut, cast or beaten flat and to measured to an appropriate size and weight, upon which the design of a coin is impressed.
<i>Follis (pl. folles)</i>	Most important copper denomination in the Roman Empire after the A. D. 498 coinage reform of Anastasius I. Worth 40 <i>nummi</i> (see below), its weight changed dramatically

throughout its period of issue, as did its relationship to the gold *solidus*.

<i>Forgery</i>	For the purposes of this study <i>forgery</i> refers to coins created in the modern period (post-1700) in order to deceive coin collectors and historians (as opposed to imitations and copies, see Fig. 5.26, which refer to unofficially-created coins or coin-like objects produced roughly contemporaneously with their prototypes).
<i>Globus cruciger</i>	Globe, topped by a cross, frequently depicted in the hands of imperial figures on Late Antique coins.
<i>Hoard</i>	Two or more coins discovered in the same place in a related context (i.e. clearly deposited at the same time, for example, in a pot or bag, or directly on top of each other, rather than simply in the same field or excavation trench).
<i>Issuing Authority</i>	Power for whom coinage is produced, and by whose authority the quality of the coin is guaranteed (often by indicating the authority on the coin). Issuing authorities may include monarchs, guilds, states and possibly town leaders. The term issuing authority is convenient as it avoids assumptions where evidence is not available as to who ordered the production of coins.
<i>Labarum</i>	Military standard, topped by the Chi Rho christogram, used on Late Antique coinage.
<i>Legend</i>	Writing often found around the edge of coins.
<i>Loros</i>	Robes modelled on the Roman toga, and signifying consular rank. Often depicted on imperial figures on Late Antique coins.
<i>Mappa</i>	Small cloth cast down by Late Roman emperors to begin chariot races. A mark of office. Often depicted in the hand of Byzantine imperial coin portraits.
<i>Miliaresion (pl. miliaresia)</i>	Silver denomination of Byzantine coinage, issued intermittently. Used by the author of the <i>Christian Topography</i> (Book Eleven) to gloss the term <i>drachma</i> when referring to Sasanian silver coinage.
<i>Mint</i>	Place at which a coin was produced. The physical attributes of

a mint could be minimal, consisting of only a pair of dies and a single artisan, or complex, involving multiple buildings, workshops and metal-working facilities.

<i>Mint mark</i>	Mark (ranging from a single symbol or monogram to the name of the mint location) applied to a coin, usually in the field of either obverse or reverse, to indicate where it was minted.
<i>Moneyer</i>	Person responsible for the production of coinage. In simple minting operations, the moneyer might perform every stage of production, including melting bullion, cutting dies, forming flans and striking coins. In larger and more complex operations, where specialists might be employed at each stage, the moneyer is taken to be the overseer, responsible for the final output of this process.
<i>Monogram</i>	Collection of letters, usually forming a word or acronym, arranged into a single design, often square in shape, in which the letters might still be found and read, but their order must be guessed, deciphered or known in advance. These could be used as mint marks on ancient coinage.
<i>Mule</i>	Single coin (usually an imitation or copy) depicting the <i>obverse</i> type of one coin, and the <i>reverse</i> type of another.
<i>Nomisma (pl. nomismata)</i>	Greek term for the standard gold denomination of the Late Roman state, equivalent to <i>solidus</i> which is used in this study by preference (see prefatory notes).
<i>Nummus (pl. nummi)</i>	Standard copper denomination of the Late Roman state.
<i>Obverse</i>	Term describing the ‘front’ of a coin. This may in some coinages be difficult to determine but is commonly the side of a coin bearing the most important device or image. When dealing with die-struck coins, the obverse is the side of the coin imprinted by the hand-held die.
<i>Officina (pl. officinae)</i>	Workshop within official Late Roman mints in which a particular coin was made. The number of <i>officinae</i> could vary over time and at different mints, ranging from two to up to ten. It is marked on Byzantine coins as by a letter, in order that in conjunction with mint marks, coins could be traced to their area of production (and presumably the personnel who produced it).

<i>Pagoda</i>	Gold coin minted in medieval India (tenth-eighteenth centuries) and sometimes discovered in hoards with Late Antique gold coins.
<i>Pallium</i>	Wide band of cloth draped over the shoulders, and signifying ordained rank within the Eastern church. A narrower form is worn to signify the rank of pope.
<i>Paludamentum</i>	Cloak fastened at the shoulder with a fibula, sometimes depicted on Late Antique coins.
<i>Pellet</i>	Small, intentional dot in the design of a coin type. Pellets may either appear as single dots, or be used to form more complex designs.
<i>Pendilia</i>	Pendants hanging down on either side of a crown sometimes depicted on Late Antique coins.
<i>Prakrit</i>	A broad term covering the vernacular Indo-Aryan languages of northern India in the period here discussed.
<i>Punchmark</i>	Mark pressed into a coin or ingot using a punch, carved with a design. Unlike a die, a punch will bear only a single design rather than the whole type of a coin face, and will usually be significantly smaller than the flan. Multiple punches could be used on a single ingot or coin.
<i>Reverse</i>	Term describing the ‘back’ of a coin, usually bearing the image or device of lesser importance. In the case of die-struck coins it refers to the face imprinted by the fixed die.
<i>Sangam</i>	See <i>Cankam</i>
<i>Semissis (pl. semissi)</i>	Gold denomination minted by the Late Antique Roman state. Half of a <i>solidus</i> .
<i>Solidus (pl. solidi)</i>	Latin term for <i>nomisma</i> (see above). The main gold denomination of the Late Roman monetary system.
<i>Stupa</i>	Constructed mound or hemispherical structure containing holy relics, usually associated with Buddhist tradition.
<i>Taluk</i>	Modern administrative subdivision of a district in India.
<i>Type</i>	Design of a coin, or individual coin face. This is often not taken to include legend, mint/moneyer/control marks, or any other devices not central to the main decorative motif, such as

pellets in the field, all of which will be described separately.

*Uniface*

Coin or bracteate with a design depicted on only one face.

*Victory*

Winged female figure often depicted on Late Antique coins.

**APPENDIX 3**

***The Christian Topography, Book Eleven - Wolska-Conus (1973)***





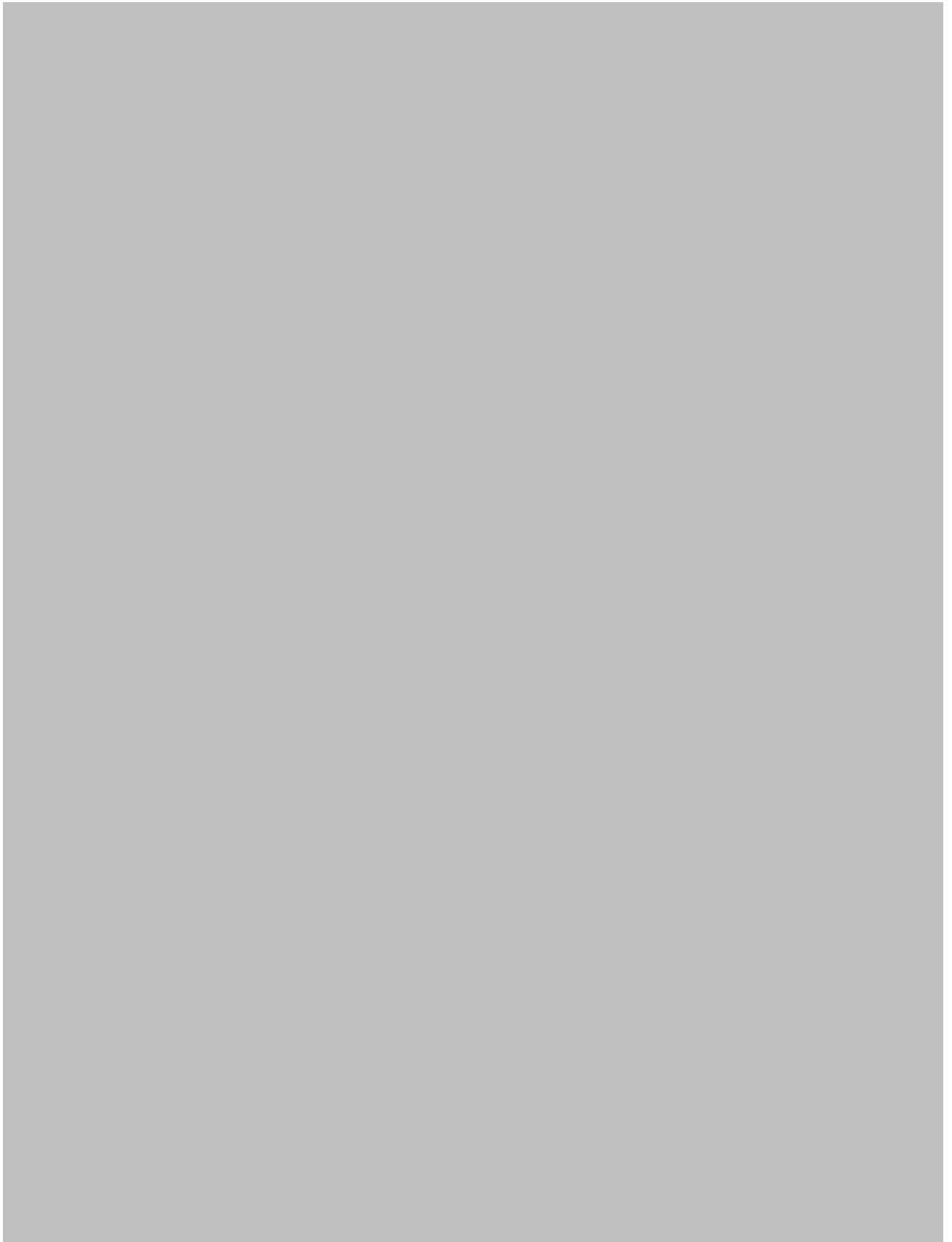


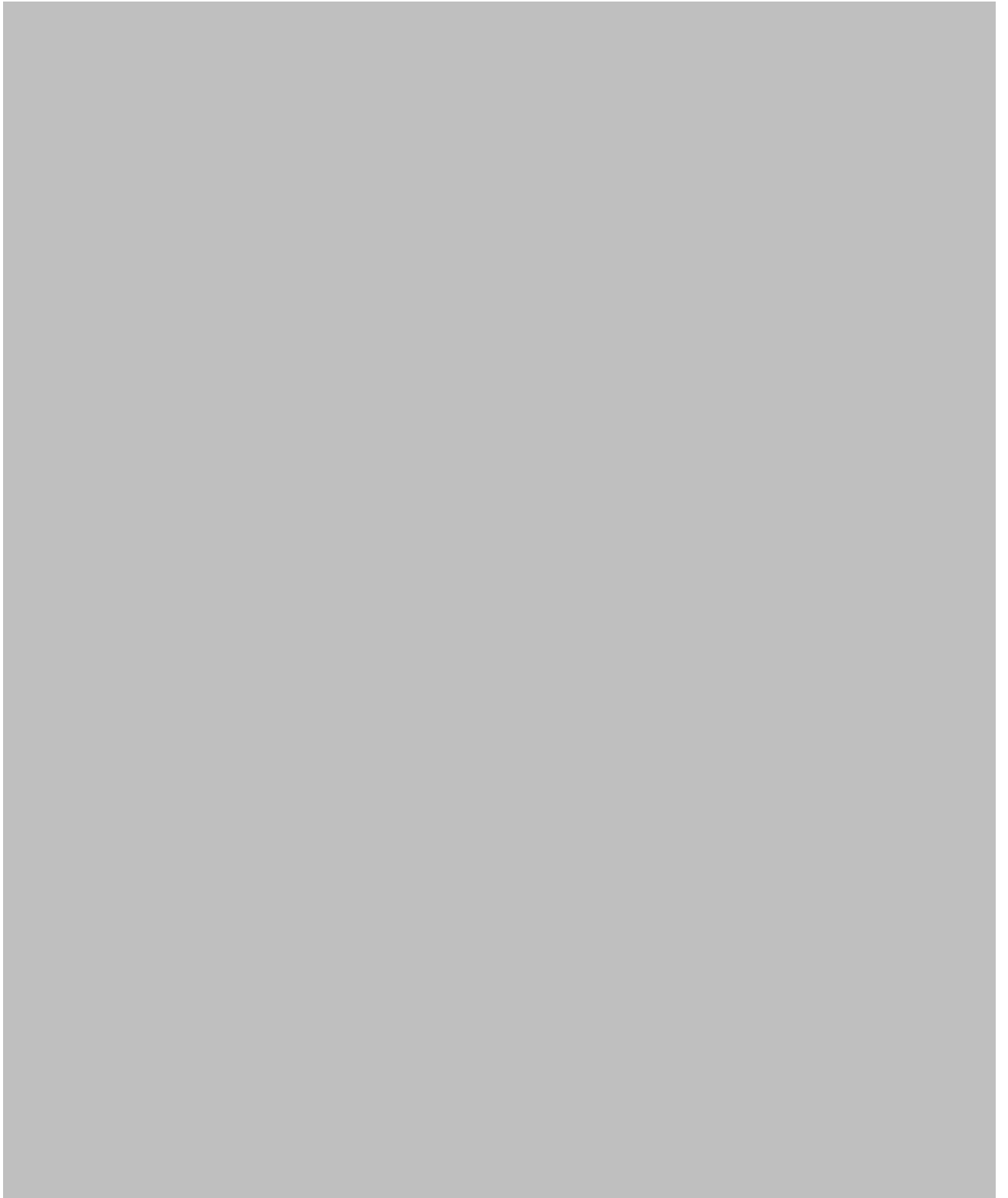


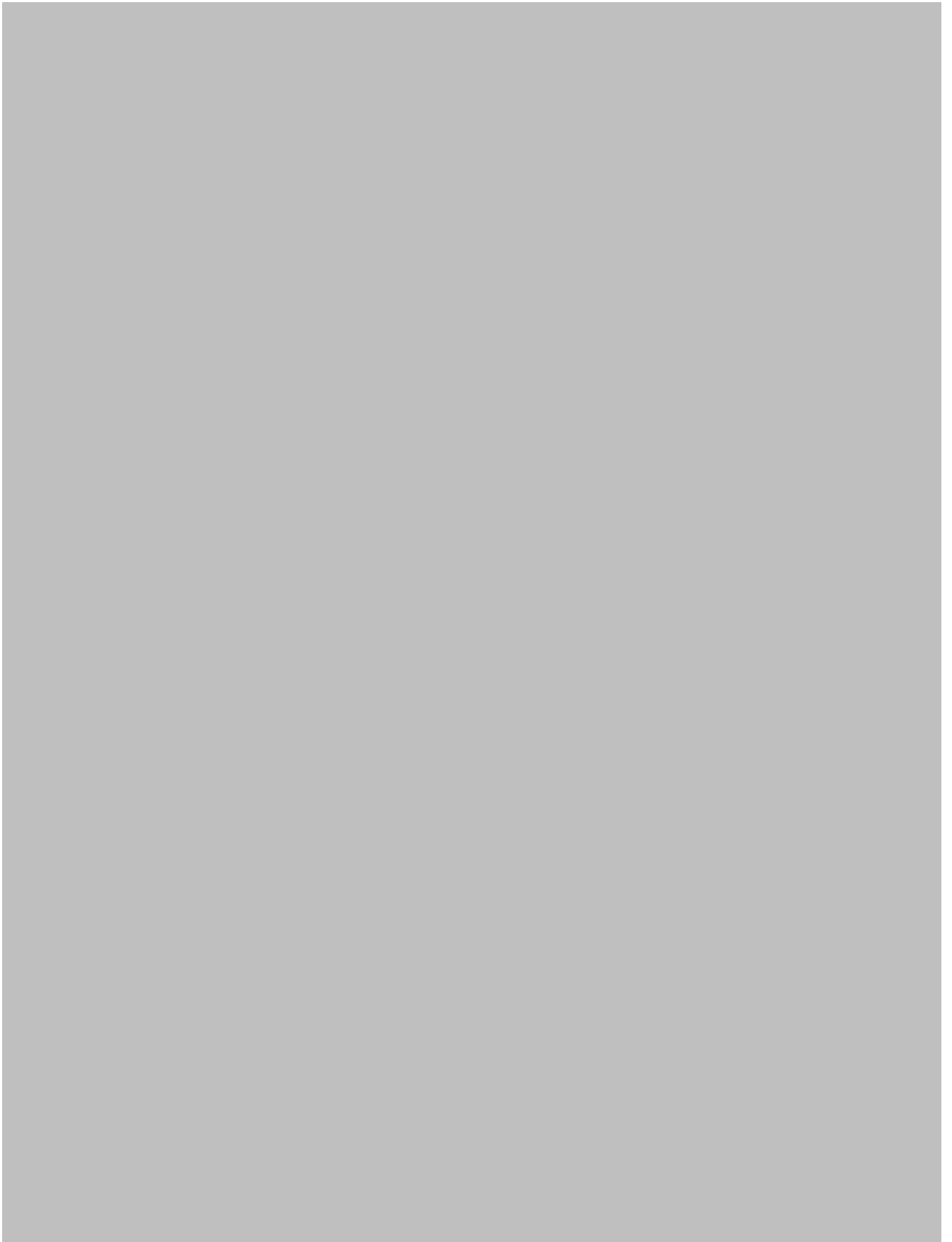


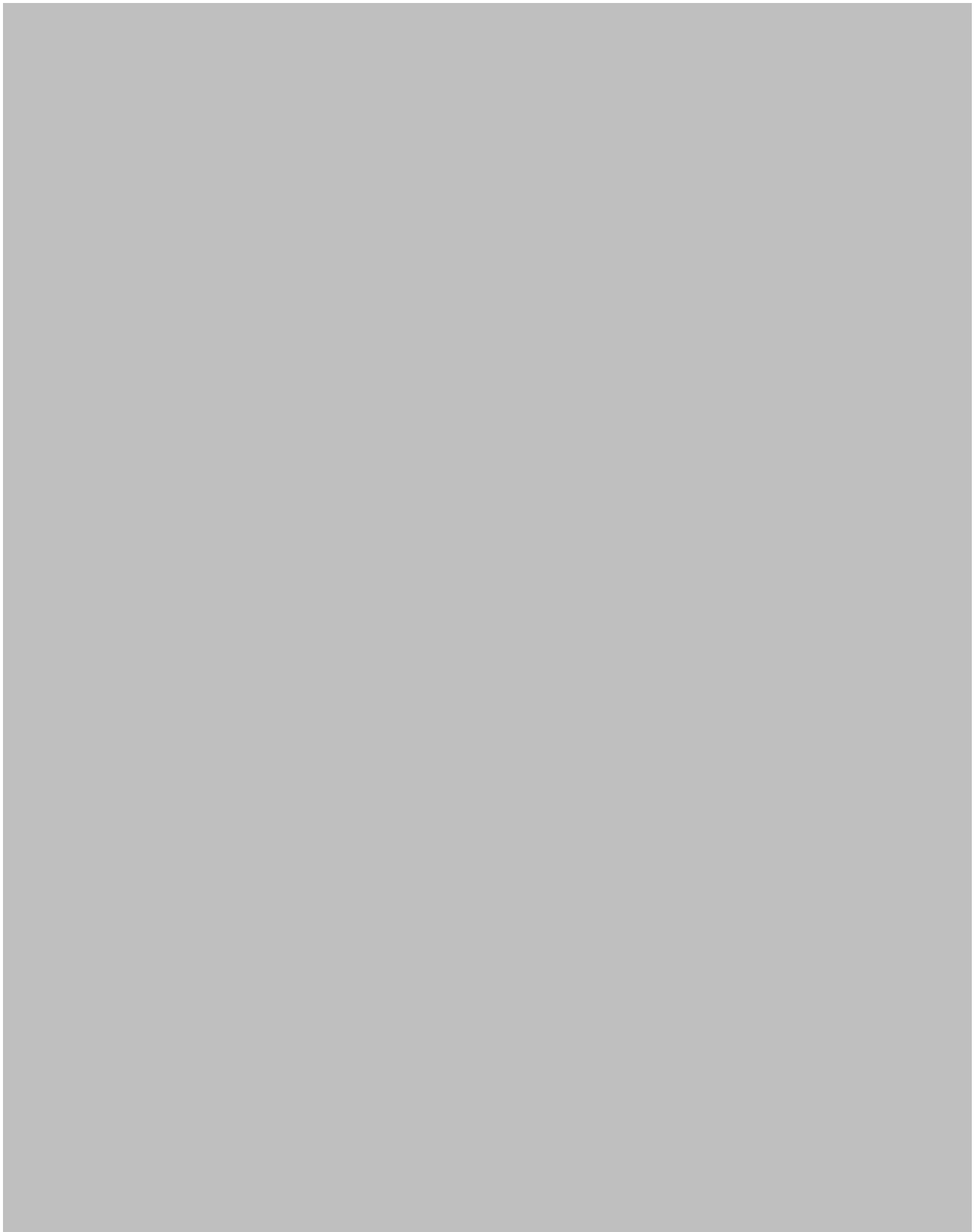




















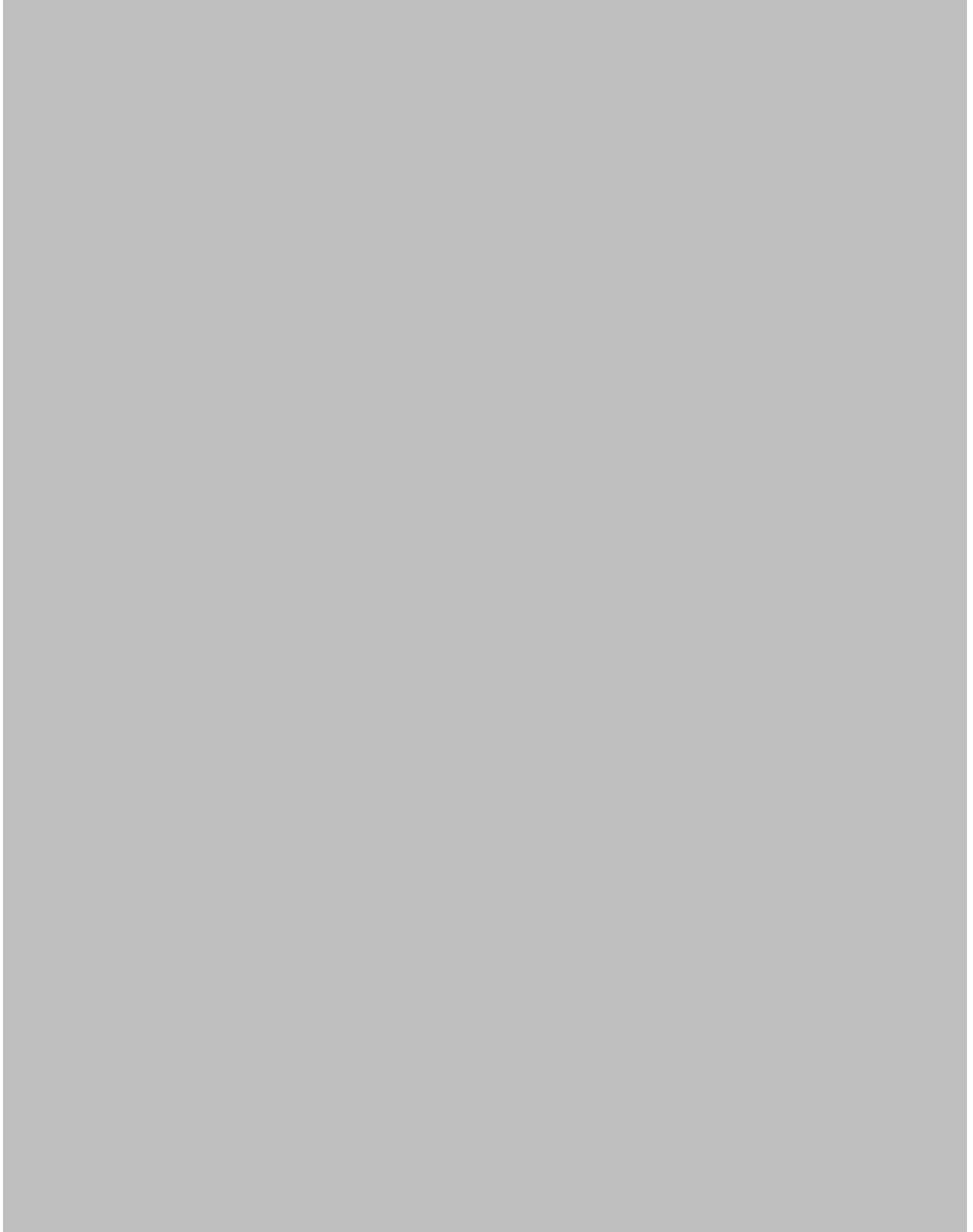


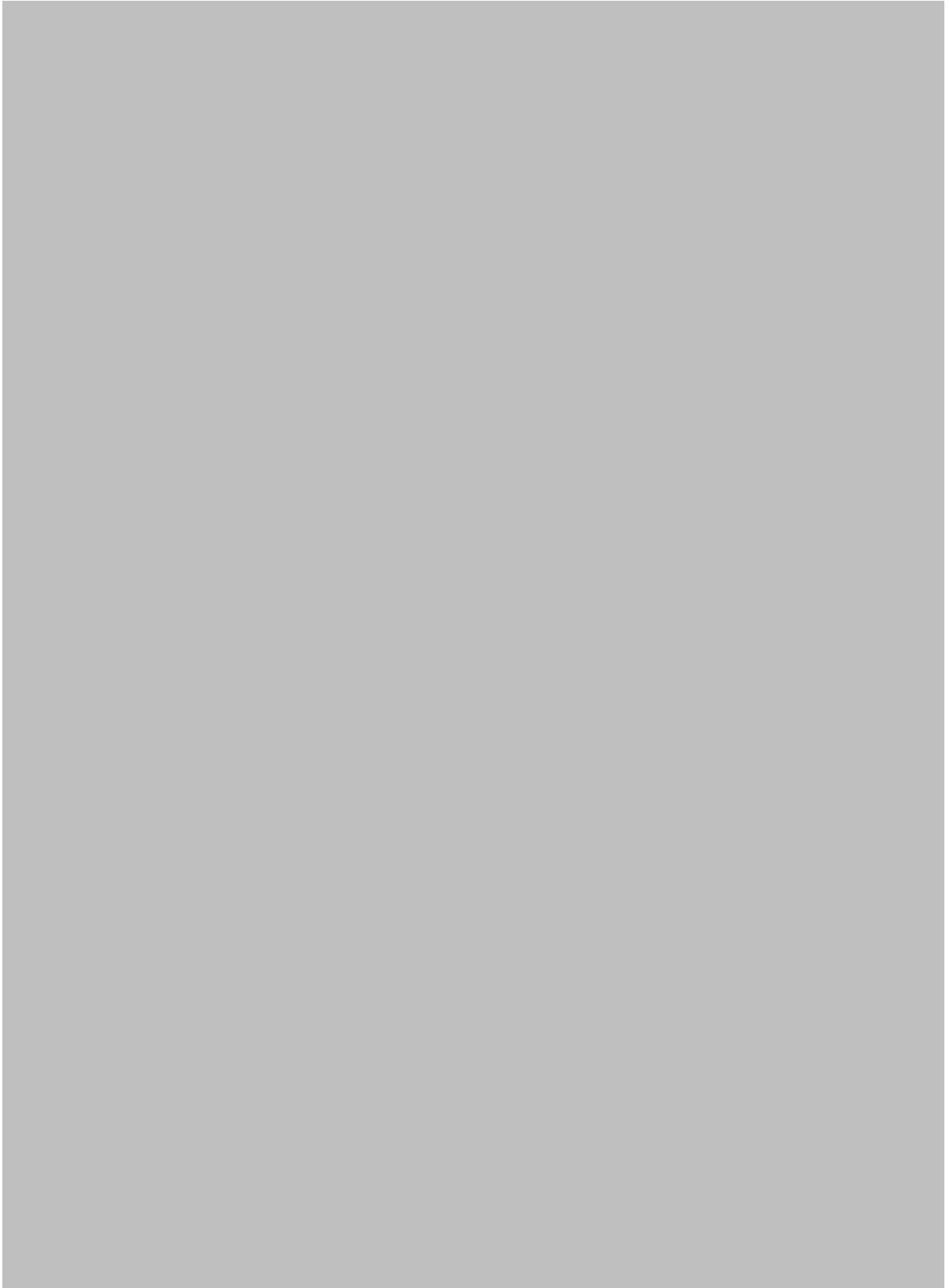




## **APPENDIX 4**

### **Letters of permission**









## APPENDIX 5

### Day (in press), pending publication

#### **The Late Roman copper coins of Karur: A south Indian case study of commerce and heritage management<sup>1</sup>**

*by Rebecca Day (University of Birmingham)*

The questions of heritage management and numismatic research have been two foci of Prof. P. Chenna Reddy's career. In this context, the case study of Late Roman coins from Karur (Tamil Nadu) is offered as a means of exploring the tensions between commercial and antiquarian interests in south India, and possible directions for the preservation of a unique site. In the previous century, the banks of the Amaravati River near Karur became well-known for the discovery of ancient coins, spawning a local economy in antiquity hunting, and producing the raw material for ongoing research. More recently, the concerns of local and regional economic development have put increasing pressure on this industry. The following article will first examine the importance of one category of finds from the Amaravati around Karur, the Late Roman copper coins. It will then analyse the reasons for the decline in such coin finds, and finally, the heritage management implications of this situation. In conclusion, a brief analysis of the work carried out by the KCHR (Kerala Council for Historical Research) in Pattanam, and the Portable Antiquities Scheme in the UK will be used to suggest possible mechanisms for protecting and publicising the antiquities of Karur in future.

In investigating the issues surrounding the Late Roman copper coins of Karur, the evidence base used must be considered. While significant published material exists concerning the coin finds and environmental pollution affecting the water courses of south India, the importance of anecdotal and oral testimony must also be weighed and considered. In particular, in discussing the problems of coin hunting around Karur, documented evidence provides only a context for the accounts of people involved in this search, many of whom are outside the world of academic publishing and wary of official sanctions against their activities (an issue addressed later in this study). Such accounts are, therefore, offered here anonymously, but supported wherever possible by external corroboration of the circumstances described.

#### **The discovery and importance of Late Roman copper coins from Karur:**

---

<sup>1</sup> The author wishes to acknowledge the assistance of the Arts and Humanities Research Council (UK) for supporting a full-time research project into the Late Roman coins of India and Sri Lanka.

In 1856 a hoard of Roman coins was discovered near Karur. Little information survives about this hoard, though we know that it consisted of precious metal coinage.<sup>i</sup> Karur thus found its place early in the long history of the discovery of Roman coinage in India. Since the late eighteenth century, documented finds of silver *denarii* and gold *aurei* and (more rarely) *solidi* have been recorded, mainly along the east or Coromandel Coast of south India and along the Palghat pass connecting the Malabar Coast with the east.<sup>ii</sup> While initially considered of purely antiquarian interest, coin finds were gradually used to support the accounts of Roman historians, including Pliny the Elder and the anonymous author of the first century A.D. *Periplus Maris Erythrae*.<sup>iii</sup> Such synthetic analysis gained pace with the excavation of Arikamedu by Mortimer Wheeler in the 1940s. The excavation of this site, including the identification of *terra sigillata* there and Wheeler's ongoing publications, sparked public and scholarly interest in Indo-Roman trade.<sup>iv</sup> In this context, Wheeler commissioned the first more-or-less comprehensive list of Roman coins finds in India in 1946.<sup>v</sup> Since the 1950s, various efforts have been made to catalogue and interpret Roman coins finds in south India, though their precise value and use in local economies of the centuries surrounding the birth of Christ remain open to debate.

Beyond an interest in Indo-Roman trade, one thread unites almost all research into Roman coins in India: it focuses on precious metal almost exclusively. In 1894 Thurston made reference to several copper coins in the hands of a private collector near Madurai and occasional copper coins appear in Wheeler's lists, but these references give the impression of a smattering of copper in a field of silver and gold.<sup>vi</sup> It is in this context that the coin finds from the Amaravati riverbed around Karur (and to a lesser extent, from the Vaigai riverbed near Madurai) acquire particular importance. Though the Amaravati riverbed has produced precious metal coins, in 1987 the existence of large quantities of Late Roman copper coins was first realised by R. Krishnamurthy, a well known coin collector and public figure in Tamil Nadu. He states that coins at that time were being sold to scrap metal merchants, sometimes by the kilogram, as there was no other market for them.<sup>vii</sup> He immediately began to collect these coins, and Krishnamurthy's collection now consists of several thousand examples in varied states of wear, mainly datable to the third and fourth centuries A.D.<sup>viii</sup>

The importance of these coin finds cannot be overstated. As noted above, the silver and gold Roman coins have borne the weight of almost all interpretation of Indo-Roman trade and form the basis of Roman coin collections in south Indian museums. The size of Krishnamurthy's collection, however, suggests a situation in which copper coin finds cannot easily be brushed off as incidental losses by occasional Roman visitors. Indeed, for the third and fourth centuries, this body of copper currency far outweighs the quantity of published precious metal Roman coins found in India. Clearly, they represent evidence of a distinct phase or circumstance of trade between Rome and India. The evidence for their use and deposition, moreover, implies a radically different role for these coins in south India. Precious metal coins occur mainly in hoards, are often well preserved, show frequent signs of suspension (either piercings or attached loops) and are frequently locally-made imitations of Roman prototypes.<sup>ix</sup> In contrast, the copper coins as published by

Krishnamurthy, Mitchiner and Radhakrishnan mainly come from riverbeds, and always as single finds, they are almost always worn, frequently heavily, are not pierced or looped for suspension, and do not seem to have been imitated locally.<sup>x</sup>

Interpretation of this data continues, but it is clear that the Late Roman copper coinage of Karur represents an important and distinct body of evidence for the nature, chronology and scale of Indo-Roman trade. The copper coinage has also provided valuable evidence for the dating of indigenous dynasties, demonstrated most clearly by Krishnamurthy's analysis of the iconographic similarity between Late Roman altar images and portrait coins, and early Sangam coins.<sup>xi</sup> In addition to the value of the Late Roman copper coins, the other finds from the Amaravati must also be considered. These include large numbers of Chera, Chinese, Dutch and British coins testifying to over two thousand years of economic exchange around the Amaravati river basin. Beads, glass fragments, metal ornaments and pottery fragments have also been discovered, and although the Late Roman copper coins form the focus of this study, the importance and future survival of all finds from this riverbed also must be borne in mind during the subsequent analysis of difficulties facing the recovery of these antiquities from the Amaravati.

#### **Discovery, preservation and the future of the antiquities of Karur:**

The account sketched above of the Late Roman copper coin finds from Karur is possible only because of fortuitous circumstances. First, the coins were identified in 1987 by Krishnamurthy. Second, Krishnamurthy subsequently chose to collect these coins, and owing to a lack of general interest and his own resources, his collection forms a substantial unified body of material. Third, Krishnamurthy is a collector committed to the scholarly pursuit of numismatics, as well as the acquisition of specimens. His collection is extensively published and accessible to other scholars.<sup>xii</sup> Krishnamurthy's service to scholarship in this regard must be acknowledged and lauded. However, the wider question still stands, of whether the preservation and publication of such an important body of historical data should have been left so much to chance. At each of the stages described above in the discovery, preservation and publication of these coins, it was luck and individual inclination, rather than a system of heritage management, which prevailed.

Parallel to questions about systems of heritage management, the continued discovery and preservation of antiquities from the Amaravati near Karur raises serious concerns, which cross boundaries between archaeological interest, commercial development and environmental protection. Both Krishnamurthy and dealers in Karur have noted that the numbers of copper coins coming to light have reduced significantly in the last decade. While it is possible that this reflects the actual quantity of ancient coinage brought to south India in antiquity, external factors contributing to the decline in coin hunting must be considered.

The productivity of the Amaravati riverbed was sufficient to produce a seasonal industry in antiquity hunting. This consisted of itinerant workers camping at regular sites along the Amaravati during and immediately after the rains in June and July. From here

they would dig the riverbed or pan for coins and antiquities to sell to local dealers, moving downstream regularly to exploit the highest water. At dryer times, digging in the riverbed could produce finds. Two forces in particular have undermined this local economy. On one hand, the work is hard, unreliable and not well remunerated. Many days searching may result only in a few single coin finds. The purchase rate was described by one local dealer as around IR 10,000 per Roman coin, and significantly less for more common types such as Chera coins. In recent years the increase in food prices and cost of living in south India has had a severe impact upon the viability of coin hunting, leading individuals to pursue agricultural work instead.

It is this economic pressure which has changed the system of coin hunting. Flat areas of dry riverbed are now rarely dug for coins. Instead, efforts focus on areas where rocks or bridge pillars disrupt the water flow, for example near Sannandangkovil, or the Kalyur double bridge. Panning in these areas, or digging at the banks around them provides the best return, as the river currents cause debris to accumulate in these areas. In this way, the total area of excavation is severely reduced, and the coins discovered are likely to be those in the worst state of preservation due to movement with the river current.



**Fig. 1:** (Left) Dug-out areas of riverbank under the Kalyur double bridge. (Right) Panning and digging tools used by local coin hunters (Sinnandangkovil) [Author's own photographs].

Such economic forces, however, cannot account entirely for the decline in coin hunting around Karur. Local coin hunters and dealers instead point to local industrial developments, particularly the cloth-dyeing industry along the Amaravati, upstream from Karur. The record of the Indian dyeing industry for environmental pollution is well documented, and continues to be a legislative problem, and a media issue.<sup>xiii</sup> In practice, local coin hunters speak of acid burns, skin irritation, and respiratory problems as a result of spending long periods in the water of the Amaravati. Without documentation of individual cases it is nonetheless possible to point to studies from elsewhere in India, which have highlighted consistent symptoms related to exposure to synthetic dyes.<sup>xiv</sup> In

any case, fear of such consequences has caused a dramatic reduction in the number of people choosing to search for coins in the river.

In addition to the forces discouraging coin hunting, dealers highlight a perceived lack of interest in the Karur coin finds by authorities as a reason for declining exploration of the river. The complaint of a lack of visits by local archaeological services is supported by the lack of references to the Amaravati riverbed, or coin finds from Karur in archaeological reports or monographs by the Archaeological Survey of India (ASI). This issue will form the main focus of the final section of this study, though it must be noted here that it is by no means the contention of this study that governmental or academic interest would significantly improve the business of the local coin dealers.

### **Heritage protection and heritage management:**

With respect to heritage management, the Roman coins of Karur pose both specific and general problems. The most immediate difficulty concerns the existence, and continued discovery, of these coins. In the present state of affairs, with coin hunters in short supply and no visible ASI interest in excavation or metal-detector survey, it is likely that remaining coins in the riverbed will be lost. Building activity along the banks of the Amaravati is resulting in the removal of vast quantities of earth, and chemical pollution in the water is unlikely to enhance the preservation of copper coins. It is, therefore, imperative that action be taken to recover the remaining antiquities from this riverbed, before they are consumed by urban expansion.

Simultaneously, the role of coin hunters in the discovery of the Roman coins from Karur raises more general issues concerning the regulation of antiquity hunting. Though their role in the discovery of this body of evidence must be duly acknowledged, the commercial agendas they serve raise inevitable questions about the accountability and reliability of their work. Current government legislation does little to bridge the gap between the interests of coin hunters and the desire of scholars. Thus, for example, the registration of antiquities discovered is likely to be a low priority for hunters and dealers owing to the lack of commercial incentive. Likewise, the low socio-economic status accorded to the migrant workers who actually search for the coins correlates with a generally low level of literacy, and economic deprivation. Under such circumstances, as Chakrabarti eloquently comments, the current requirements for registration are extremely prohibitive:

The hub of the regulatory framework in India is...The Antiquities and Art Treasures Act of 1972, with various ordinances and notifications associated with it. This act is fairly Draconian...The onus of registering everything with the government and that too in triplicate, with three copies of photographs and within a very short time-frame lies entirely with the individual. In a country with limited literacy the effectiveness of such a piece of legislation can easily be imagined.<sup>xv</sup>

Such a gulf between the groups primarily invested in the discovery on one hand, and the study on the other, of antiquities from the Amaravati is in part narrowed by the dealers, who currently form the outlet for such finds, but this narrowing could be taken still further. Such dealers often have a real personal interest in the artefacts which they sell, and a knowledge of and sensitivity to the patterns and meaning of finds in their local area, from which the wider academic community could benefit. However, they too feel the pressure of current antiquities legislation. For example, the burden of full registration described above (which is required for any item over one hundred years old) is practically impossible for the coin hunters. For the dealers, whose stock may run to several tens of thousands of items if they specialise in coin finds, the legislation pushes them into a position of unavoidable recalcitrance. This in turn prevents publication since it is feared that the presentation of unregistered items will attract the hostility of authorities. This situation is bound in turn to generate a level of indifference to legislation, which magnifies more serious problems such as the export of antiquities.

These observations are not new, but in the case of Karur the problems are rendered particularly serious owing to the wealth of antiquities concentrated around the city.<sup>xvi</sup> It is, therefore, proposed here, that as the situation of the town is specific, so too may be a solution. Two approaches from south India and the UK may suggest fruitful directions in which authorities might pursue a local accommodation, which could utilise the expertise of local hunters and dealers, while simultaneously taking more effective control over the recovery of antiquities. The excavation since 2007 of Pattanam, in Kerala, a port site identified as the ancient *emporium* of Muchiri (Muziris), by the KCHR demonstrates how compromise can be reached between local communities and the needs of archaeology. The Portable Antiquities Scheme, introduced in the UK in 1997 in turn provides a possible model for the productive association of amateur treasure hunters and collectors with researchers by means of a transparent, accessible and user-friendly interface, provided in the UK by local offices located in museums and universities. The creation of a local antiquities office in Karur, drawing on the methods and experiences of these case studies, may provide the best available mechanism for the salvation of river finds from Karur.

The excavation of Pattanam, now in its fourth season, provides a valuable model of archaeologists working within a local community to create associations of trust and cooperation. Certainly tensions persist between the needs of local residents and excavators: the Pattanam site is almost entirely privately owned and the possibility of governmental acquisition of land for heritage protection generates fear among villagers. However, by keeping their excavation office in the community, and communicating with local villagers, members of the KCHR have concurrently succeeded in creating networks of awareness and openness. For example, large quantities of beads can be found on the surface of the site and have in some cases been collected by local individuals. By opening a dialogue with these collectors, excavators are able to incorporate the data from these collections into their research, rather than losing it. Likewise, by negotiating with locals to purchase or rent land for excavation, rather than focussing solely on governmental acquisition, the Pattanam project may succeed in eroding local suspicion and fear of the discovery of

antiquities.<sup>xvii</sup> The work of the KCHR is currently at an early stage and cannot be considered a prescriptive model for archaeological undertakings elsewhere in south India, but its close connection with a single locality, and the efforts of excavators to engage public interest could be applied with benefit to Karur.

The Portable Antiquities Scheme in the UK, in comparison, provides a more structured model for the development of networks of understanding between the public and archaeological services. While the scheme does not offer a ready-made solution to the problems of antiquity conservation in Karur, it hints at potential directions. It is also of interest since the Portable Antiquities Scheme emerges from a basically similar legislative background to that which prevails in India: despite their distinct developments since 1946, the shared ancestry of UK and Indian heritage management laws ensures a degree of commonality in outlook and approach. Like the Pattanam excavation, the main lessons of the Portable Antiquities Scheme concern the embedding of archaeological personnel in communities and the active involvement of governmental or academic bodies in public education and interface.

Outlined briefly, the Portable Antiquities Scheme, inaugurated in 1997, provides a mechanism for the reporting of small finds by members of the public which is both easier to comply with than current Indian legislation, and which actively seeks to generate trust and cooperation as well as simply compliance. Under this scheme, finders of single portable antiquities are encouraged to register the discovery with local authorities. Assurances are provided that such finds will not be confiscated, but it allows museums and scholars access to data regarding the type and distribution of small finds appearing in specific geographical areas, and to collate these results nationally.<sup>xviii</sup>

The key aspects of the scheme, which could be profitable in the case of Karur are, first, the understanding it has generated by a combination of publicity and good practice between finders (often amateur specialists, such as metal detectorists, who can in this respect be compared to the coin hunters of Karur) and archaeologists. As a result of this understanding finders are more likely to submit items for registration without fear of confiscation or other penalty. Second, the scheme benefits from having offices in regional centres, rather than a single national hub. This not only facilitates registration in a practical sense, but also helps to build up meaningful, face-to-face relationships between registering officers (often museum staff or other trained personnel) and local treasure hunters, antiquarian societies etc. Finally, the responsibility of recording and identifying items falls largely upon the Scheme personnel, rather than the finder. As a result, objects on one hand receive closer professional attention, and on the other hand finders are less likely to be discouraged by burdensome regulations or limited literacy.

It is not the proposition of this study that the Portable Antiquities Scheme should be applied wholesale to India, nor indeed could it be applied locally in Karur in an unmodified form. The Scheme, for example, excludes gold, silver, multiple coins over 300 years old from the same site or pre-historic base-metal finds from the same site (which must be reported by law as Treasure), which means that the entire Karur riverbed would, by definition, be excluded by the richness of its finds. Similarly, the Portable Antiquity



Scheme is aimed primarily at recording finds made by amateurs collecting out of personal or antiquarian interest, rather than the economically motivated coin hunters of Karur. Finally, the Portable Antiquities Scheme was envisioned as a national mechanism to record artefacts, while the focus here is on a single city and its hinterland only. The need to respond to unique local circumstances lies at the heart of this study, and the examples of the Pattinam excavation and the Portable Antiquities Scheme are intended to suggest possibilities available to Tamil Nadu authorities for the appropriate protection and management of antiquities from Karur, not a prescription for action.

It is suggested, however, that the involvement of authorities is crucial at this juncture, as the ongoing issues of environmental pollution and urban development can only hope to be addressed by means of legislative protection: neither the coin hunters, dealers nor collectors have the means to ensure the continued preservation of the Amaravati riverbed as a site of archaeological importance. The Amaravati riverbed does not immediately appear to conform to the established pattern of ASI protected sites (mainly standing temples or, occasionally, large multi-period excavations such as Arikamedu), however, its long record of antiquity finds, and the almost unique nature of some of these finds suggests that the scope of protection needs now to be widened not only for the benefit of future scholarship, but also the local community. A close relationship between an outreach office of the ASI and the various communities in Karur with an interest in the discovery of antiquities could help to develop a workable model of such cooperation for use in other areas, and simultaneously, deepen the public perception of archaeology in India as an embedded and significant part of the cultural life of the nation.

### **Conclusion:**

The important finds of Roman copper coins from Karur have come to light only because of the efforts of professional coin hunters and dealers, and the the willingness of their principle collector to publish. The claim of these individuals to credit, acknowledgement, and a future stake in the coins of Karur must therefore be considered seriously. Changing local circumstances and the unique importance of this riverbed, however, suggest that the time is appropriate for governmental intervention. Without a major ASI project to survey the banks of the Amaravati the future of the remaining antiquities of Karur is uncertain. At present, the unregulated acquisition of coins from the riverbed is the only means for their recovery, but it is clear that this does not ultimately work in the best interests of scholarship. With dealers and collectors urging greater interest by authorities in the richness of the Amaravati riverbed, though, the time for accommodation seems at hand. In addition, the present confluence of heritage management concerns and wider issues of environmental pollution and industrial waste disposal make the potential of such an accommodation still more promising.

- 
- <sup>i</sup> Turner, P. J. 1989 *Roman coins from India*, London, 2
- <sup>ii</sup> Clear maps of coin finds can be found in P. J. Turner, 1989 *Roman coins from India*, London; P. Berghaus, 1993, 'Indian imitations of Roman coins' *International Congress of Numismatics* 2, 305-10. For a succinct discussion of the trade routes marked by these coins see S. P. Kandaswamy, 1984, 'The Kongu and the Roman coins' *Journal of the Numismatic Society of India* 46, 39-44.
- <sup>iii</sup> Pliny, C. *Natural History*, Vol. 2, trans. H. Rackham, Cambridge (Mass), 6:101; *The Periplus of the Erythraean Sea: travel and trade in the Indian Ocean by a merchant of the first century*, trans. W. H. Schoff, 2007, London.
- <sup>iv</sup> Wheeler, R. 1954a, *Archaeology from the earth*, Oxford; 1954b, *Rome beyond the imperial frontiers*, London; 1955, *Still digging: interleaves from an antiquary's notebook*, (3<sup>rd</sup> Ed.), London; 1976, *My archaeological mission to India and Pakistan*, London.
- <sup>v</sup> Wheeler, R.E.M., A. Ghosh and Krishna Deva, 1946, 'Arikamedu: an Indo-Roman trading station on the east coast of India' *Ancient India* 2, 17-124.
- <sup>vi</sup> Thurston, E. 1894 *Madras Government Museum, Catalogue No. 2: Roman, Indo-Portuguese and Ceylon*, Madras, 29.
- <sup>vii</sup> Krishnamurthy, R. 2007, *Late Roman copper coins from south India: Karur, Madurai and Tirukkoilur* (2<sup>nd</sup> ed.), Chennai, viii.
- <sup>viii</sup> Krishnamurthy, R. 2007, *Late Roman copper coins from south India: Karur, Madurai and Tirukkoilur* (2<sup>nd</sup> ed.), Chennai; R. Krishnamurthy, 1994, *Late Roman copper coins from south India: Karur, Madurai*, Chennai.
- <sup>ix</sup> Berghaus, P. 1993, 'Indian imitations of Roman coins' *International Congress of Numismatics* 2, 305-10.
- <sup>x</sup> Mitchiner, M. 1998, *The coinage and history of southern India Part II: Tamil Nadu and Kerala*, London, 120-6; P. V. Radhakrishnan in this volume.
- <sup>xi</sup> Krishnamurthy, R. 2010, *Dating of the Sangam age: important numismatic findings*, Chennai.
- <sup>xii</sup> Krishnamurthy, R. 1994, *Late Roman copper coins from south India: Karur and Madurai*, Chennai; R. Krishnamurthy, R. 2007, *Late Roman copper coins from south India: Karur, Madurai and Tirukkoilur* (2<sup>nd</sup> ed.), Chennai; While Krishnamurthy's is the largest collection of these coins, a small number of other specimens have also been published: M. Mitchiner, 1998, *The coinage and history of southern India Part II: Tamil Nadu and Kerala*, London, 115-26; P. V. Radhakrishnan in this volume.
- <sup>xiii</sup> For recent media attention on the problem of effluent disposal in Tamil Nadu see the following and related stories: Legal Correspondent, 10/02/2011, 'Court directive to pollution control board on dyeing units' petition', *The Hindu* (Chennai), <http://www.thehindubusinessline.com/industry-and-economy/article1327455.ece> (consulted 22/2/2011); L. N. Revathy, 15/02/2011, 'Noyyal River: no longer a life giver', *The Hindu*, <http://www.thehindubusinessline.com/industry-and-economy/economy/article1458624.ece> (consulted 22/2/2011); Legal Correspondent, 10/02/2011, 'Court directive to pollution control board on dyeing units' petition', *The Hindu* (Chennai), <http://www.thehindubusinessline.com/industry-and-economy/article1327455.ece> (consulted 22/2/2011).
- <sup>xiv</sup> Govindarajalu, K. 2003, 'Industrial Effluent And Health Status - A Case Study Of Noyyal River Basin' in Martin J. Bunch, V. Madha Suresh and T. Vasantha Kumaran (eds), *Proceedings of the Third International Conference on Environment and Health, Chennai, India, 15-17 December, 2003*, Chennai, 150-7; R. Rajamanickam, S. Nagan, 2010, 'Groundwater Quality Modeling of Amaravathi River Basin of Karur District, Tamil Nadu, Using Visual Modflow', *International Journal of Environmental Sciences*, 1.1, 91-108; K. Varunprasath, A. Nicholas Daniel, 2010, 'Comparison Studies of Three Freshwater Rivers (Cauvery, Bhavani and Noyyal) in Tamilnadu, India', *Iranica Journal of Energy and Environment*, 1.4, 315-20.

---

<sup>xv</sup> Chakrabarti, D. K. 2003, *Archaeology in the Third World: a history of Indian archaeology since 1947*, New Delhi, 182.

<sup>xvi</sup> For a general discussion of these problems see D. K. Chakrabarti, 2003, *Archaeology in the Third World: a history of Indian archaeology since 1947*, New Delhi.

<sup>xvii</sup> For findings at Pattanam see: P. J. Cherian<sup>1</sup>, G. V. Ravi Prasad, Koushik Dutta, Dinesh Kr. Ray, V. Selvakumar, K. P. Shajan, 2009, 'Chronology of Pattanam: a multi-cultural port site on the Malabar coast' *Current Science* 97.2, 236-240. For ongoing work of the KCHR see <http://www.keralahistory.ac.in/>; K. P. Shajan, P. J. Cherian, R. Tomber, V. Selvakumar, 2008, 'The external connections of Early Historic Pattanam, India: the ceramic evidence', *Antiquity* Vol. 82, Issue 315, <http://www.antiquity.ac.uk/projgall/tomber315/> (consulted 03/03/2011). The importance of negotiating with local landowners rather than turning to governmental land-acquisition in order to gain the most benefit from the site was emphasised by P. J. Cherian during his paper, *Evidence of Indian Ocean trade from the Malabar coast*, 27/02/2011 during the colloquium, *The ports of the Indian Ocean, from the Red Sea to the Gulf of Bengal* 23<sup>rd</sup>-27<sup>th</sup> February 2011, hosted in Kolkata by the Centre for Archaeological Studies and Training, East India.

<sup>xviii</sup> <http://finds.org.uk/>.

## APPENDIX 6

The following table provides the data used to construct Fig. 5.8, along with published references. The attribution of emperors' coins to a specific century is provided in order to indicate how reigns spanning more than one century were determined.

Publications referred to are:

Krishnamurthy:

Krishnamurthy, R. (2007) *Late Roman copper coins from south India: Karur, Madurai and Tirukkoilur*, Chennai: Garnet publishers.

Sathyamurthy:

Sathyamurthy, T. (1992) *A catalogue of Roman gold coins*, Thiruvananthapuram: Kerala State Department of Archaeology.

Subrahmanyam:

Subrahmanyam, B., Rama Krishna Rao, G. V. and Brahma Chary, P. (2008) *Roman gold coins: a treasure trove from Penuganchiprolu*, Hyderabad: Department of Archaeology and Museums, Government of Andhra Pradesh.

Turner:

Turner, P. J. (1989) *Roman coins from India*, London: Royal Numismatic Society.

Emperor	Century	Gold	Silver	Copper	Publication
Anastasius I	6th century	17			Catalogue (Appendix 1), Nos 35-51
Antoninus Pius	2nd century	1			Turner p. 53
Antoninus Pius	2nd century	9			Turner p. 57
Antoninus Pius	2nd century	1			Turner p. 65
Antoninus Pius	2nd century	5			Turner p. 66
Antoninus Pius	2nd century	1			Turner p. 68
Antoninus Pius	2nd century	2			Turner p. 69
Antoninus Pius	2nd century	1			Turner p. 71
Antoninus Pius	2nd century	6			Turner p. 84
Antoninus Pius	2nd century	18			Subrahmanyam pp. 21-30
Antoninus Pius	2nd century	138			Sathyamurthy pp. 20-27
Augustus	1st century	1			Turner p. 46

Augustus	1st century		369	Turner p. 50
Augustus	1st century		1	Turner p. 52
Augustus	1st century		47	Turner p. 55
Augustus	1st century	1		Turner p. 59
Augustus	1st century		27	Turner p. 59
Augustus	1st century		35	Turner p. 61
Augustus	1st century	6		Turner p. 63
Augustus	1st century		1	Turner p. 65
Augustus	1st century	2		Turner p. 69
Augustus	1st century		13	Turner p. 70
Augustus	1st century		1	Turner p. 73
Augustus	1st century		1	Turner p. 73
Augustus	1st century	1		Turner p. 74
Augustus	1st century	42		Turner p. 74
Augustus	1st century		135	Turner p. 81
Augustus	1st century		67	Turner p. 83
Augustus	1st century	1		Subrahmanyam p. 4
Augustus/Tiberius	1st century		233	Turner p. 60
Caligula	1st century	1		Turner p. 58
Caligula	1st century	3		Turner p. 63
Caligula	1st century	14		Turner p. 74
Caligula	1st century		3	Turner p. 81
Caracalla	3rd century	1		Turner p. 63
Caracalla	3rd century	1		Turner p. 67
Caracalla	3rd century	2		Turner p. 80
Caracalla	3rd century	1		Turner p. 84
Claudius	1st century	1		Turner p. 53
Claudius	1st century	2		Turner p. 55
Claudius	1st century		6	Turner p. 55
Claudius	1st century	18		Turner p. 58
Claudius	1st century	3		Turner p. 59
Claudius	1st century	17		Turner p. 63
Claudius	1st century	5		Turner p. 64
Claudius	1st century	8		Turner p. 69
Claudius	1st century	154		Turner p. 74
Claudius	1st century	2		Turner p. 78
Claudius	1st century		5	Turner p. 81
Claudius	1st century	4		Subrahmanyam pp. 7-9
Claudius	1st century	1		Sathyamurthy p. 13
Commodus	2nd century	1		Turner p. 50
Commodus	2nd century	1		Turner p. 51
Commodus	2nd century	1		Turner p. 57
Commodus	2nd century	1		Turner p. 67
Commodus	2nd century	1		Turner p. 78

Commodus	2nd century	1	Turner p. 84
Constantine I	4th century	1	Turner p. 86
Domitian	1st century	1	Turner p. 46
Domitian	1st century	5	Turner p. 58
Domitian	1st century	1	Turner p. 58
Domitian	1st century	1	Turner p. 64
Domitian	1st century	1	Turner p. 64
Domitian	1st century	1	Turner p. 69
Domitian	1st century	1	Turner p. 84
Domitian	1st century	1	Subrahmanyam p. 16
Domitian	1st century	2	Sathyamurthy p. 14
Elagabalus	3rd century	1	Subrahmanyam p. 32
Hadrian	2nd century	4	Turner p. 80
Hadrian	2nd century	1	Turner p. 46
Hadrian	2nd century	1	Turner p. 50
Hadrian	2nd century	1	Turner p. 58
Hadrian	2nd century	1	Turner p. 68
Hadrian	2nd century	4	Turner p. 71
Hadrian	2nd century	1	Turner p. 72
Hadrian	2nd century	2	Turner p. 80
Hadrian	2nd century	2	Turner p. 84
Hadrian	2nd century	3	Subrahmanyam pp. 20-21
Hadrian	2nd century	80	Sathyamurthy pp. 16-20 Catalogue (Appendix 1), Nos. 52-54
Justin I	6th century	3	Catalogue (Appendix 1), No. 55
Justinian	6th century	1	Catalogue (Appendix 1), Nos 22-28
Leo I	5th century	7	Catalogue (Appendix 1), Nos 15-21
Marcian	5th century	7	Turner p. 51
Marcus Aurelius	2nd century	1	Turner p. 69
Marcus Aurelius	2nd century	1	Turner p. 80
Marcus Aurelius	2nd century	1	Turner p. 84
Marcus Aurelius	2nd century	4	Sathyamurthy p. 27
Maximinus	3rd century	1	Subrahmanyam p. 33
Nero	1st century	1	Turner p. 55
Nero	1st century	3	Turner p. 55
Nero	1st century	17	Turner p. 58
Nero	1st century	2	Turner p. 58
Nero	1st century	10	Turner p. 63
Nero	1st century	3	Turner p. 64
Nero	1st century	1	Turner p. 65
Nero	1st century	1	Turner p. 67
Nero	1st century	20	Turner p. 69

Nero	1st century	1		Turner p. 72
Nero	1st century	116		Turner p. 74
Nero	1st century	1		Turner p. 78
Nero	1st century		1	Turner p. 81
Nero	1st century	11		Subrahmanyam p. 9-14
Nero	1st century	9		Sathyamurthy pp. 13-14
Nerva	1st century	2		Turner p. 58
Nerva	1st century	1		Turner p. 69
Nerva	1st century	3		Subrahmanyam pp. 16-17
Nerva	1st century	1		Sathyamurthy p. 14
	Pre-1st century			
Republican	A.D.	5		Turner p. 55
Republican	Pre-1st century A.D.		7	Turner p. 66
Septimius				
Severus	3rd century	1		Turner p. 49
Septimius				
Severus	3rd century	1		Turner p. 50
Septimius				
Severus	3rd century	1		Turner p. 53
Septimius				
Severus	3rd century	18		Turner p. 54
Septimius				
Severus	3rd century	1		Turner p. 67
Septimius				
Severus	3rd century	1		Turner p. 80
Septimius				
Severus	3rd century	1		Turner p. 85
Septimius				
Severus	3rd century	1		Turner p. 86
Septimius				
Severus	3rd century	4		Subrahmanyam pp. 30-32 Catalogue (Appendix 1), Nos. 1-14
Theodosius II	5th century	14		
Tiberius	1st century	10		Turner p. 46
Tiberius	1st century		1029	Turner p. 50
Tiberius	1st century		2	Turner p. 51
Tiberius	1st century		2	Turner p. 52
Tiberius	1st century	8		Turner p. 55
Tiberius	1st century		6	Turner p. 55
Tiberius	1st century		2	Turner p. 57
Tiberius	1st century	6		Turner p. 58
Tiberius	1st century	1		Turner p. 59
Tiberius	1st century		90	Turner p. 59
Tiberius	1st century	1		Turner p. 61
Tiberius	1st century	3		Turner p. 63
Tiberius	1st century		2	Turner p. 63
Tiberius	1st century	1		Turner p. 68
Tiberius	1st century	17		Turner p. 69

Tiberius	1st century		26	Turner p. 70
Tiberius	1st century	168		Turner p. 74
Tiberius	1st century		11	Turner p. 77
Tiberius	1st century	3		Turner p. 78
Tiberius	1st century	1		Turner p. 80
Tiberius	1st century		378	Turner p. 81
Tiberius	1st century		1	Turner p. 84
Tiberius	1st century	2		Turner p. 84
Tiberius	1st century	6		Subrahmanyam pp. 4-7
Tiberius	1st century	8		Sathyamurthy p. 13
Titus	1st century	1		Sathyamurthy p. 14
Trajan	2nd century	1		Turner p. 46
Trajan	2nd century	1		Turner p. 48
Trajan	2nd century	1		Turner p. 53
Trajan	2nd century	1		Turner p. 55
Trajan	2nd century	2		Turner p. 65
Trajan	2nd century	2		Turner p. 69
Trajan	2nd century	3		Turner p. 71
Trajan	2nd century	1		Turner p. 80
Trajan	2nd century	4		Subrahmanyam pp. 18-19
Trajan	2nd century	24		Sathyamurthy pp. 14-16
Unidentified	1st century		5	Turner p. 47
Unidentified	1st century		1507	Turner p. 47
Unidentified	5th century	48		Turner p. 60
Unidentified	2nd century	2		Turner p. 79
Unidentified	2nd century	1		Turner p. 80
Unidentified	7th century	2		Turner p. 86
Unidentified	1st century		163	Turner p. 86
Various	2nd century	18		Turner p. 53
Various	4th century		616	Krishnamurthy p. 90
Various	5th century		101	Krishnamurthy p. 90
Vespasian	1st century	5		Turner p. 57
Vespasian	1st century	2		Turner p. 58
Vespasian	1st century	3		Turner p. 74
Vespasian	1st century	1		Turner p. 84
Vespasian	1st century	2		Subrahmanyam p. 15
Vespasian	1st century	6		Sathyamurthy p. 14
Zeno	5th century	6		Catalogue (Appendix 1), Nos 29-34



## BIBLIOGRAPHY

### PRIMARY SOURCES

#### Antiquities legislation

Government of India, *The antiquities and art treasures act, 1972*, Act 52 of 1972.

----, *The ancient monuments and archaeological sites and remains act, 1958*, Act 24 of 1958.

----, *The ancient monuments preservation act [as modified up to 1<sup>st</sup> September, 1949]*, Act 7 of 1904.

----, *Indian treasure trove act [as modified up to 1<sup>st</sup> September, 1949]*, Central Act 6 of 1878: 5.

Government of Karnataka, *Karnataka Treasure Trove Act, 1962*, Act 23 of 1963.

----, *The Mysore Ancient and Historical Monuments and Archaeological Remains and Sites Act, 1961*, Mysore Act 7 of 1962.

Government of Kerala, *The Kerala ancient monuments and archaeological sites and remains act, 1969*

----, *The Kerala treasure trove act, 1968*

----, *The Kerala Ancient Monuments and Archaeological Sites and Remains Act, 1969*

Government of Tamil Nadu, *The Indian treasure trove (Tamil Nadu amendment) act, 1949*, Act 36 of 1949.

#### Arrian *Indike*

Brunt, P. A. (ed. and trans.) (1983) *Arrian with an English translation by P. A. Brunt, volume 2: Anabasis Alexandri, Books V-VII, Indica*, London: William Heinemann.

#### Arrian *Periplous of the Euxine Sea*

*Manuscript available online:*

Universitätsbibliothek Heidelberg, digitale Bibliothek: <http://digi.ub.uni-heidelberg.de/diglit/cpgraec398/0064?sid=2b9be253030467d8d0775d1d129c4811> (accessed 04/10/2012).

*Editions cited:*

Liddle, A. (ed.) (2003) *Arrian, Periplus Ponti Euxini*, new edition, London: Bristol Classical Press.

**Avienus *Ora maritima***

Berthelot, A. (1934) *Avienus, Ora maritima*, Paris: H. Champion.

***Beowulf***

Swanton, M. (ed.) (1997) *Beowulf, edited with an introduction, notes and prose translation*, Manchester: Manchester University Press.

**Book of the Eparch**

Dučjev, I. (1970) *The book of the Eparch*, London: Variorum reprints.

***Cankam poetry***

*Standard edition used for quotation. All translations by R. Darley using Hart (III) and Heifetz unless otherwise stated:*

Hart (III), G. L. and Heifetz, H. (1999) (ed. and trans.) *The four hundred songs of war and wisdom*, New York: Columbia University Press.

Kesigan, P. (2007), *மணிமேகலை*, 3<sup>rd</sup> edition, Chennai: Pari Nilayum.

----. (2006) *அகநானூறு*, 3<sup>rd</sup> edition, Chennai: Pari Nilayum.

*Other editions cited:*

Kanakasabai, V. (1904) *The Tamils eighteen hundred years ago*, Madras: South India Saiva Siddhanta Works Publishing Society.

Hart (III), G. L. (1979) *Poets of the Tamil anthologies. Ancient poems of love and war*, Princeton: Princeton University Press.

**Chinese chronicles with references to the west**

Hirth, F. (1885) *China and the Roman Orient: researches into their ancient and medieval relations as represented in old Chinese records*, Chicago: Ares (reprinted 1975).

***Christian Topography***

*Standard edition used for quotations. All translations by R. Darley unless otherwise stated:*

Wolska-Conus, W. (1973) *Cosmas Indicopleustes: Topographie Chretienne, tome III*, Paris: Les editions du Cerf.

----. (1970) *Cosmas Indicopleustes: Topographie Chretienne, tome II*, Paris: Les editions du Cerf.

----. (1968) *Cosmas Indicopleustes: Topographie Chretienne, tome I*, Paris: Les editions du Cerf.

*Other editions cited:*

McCrindle, J. W. (1897) *The Christian Topography of Cosmas, an Egyptian monk*, London: Hakluyt Society.

Montfaucon, B. d. (1708) *Palaeographis Graeca, sive de ortu et progressu literarum Graecarum, et de variis omnium saecularum scriptiois Graecae generibus: itemque de abbreviationibus et de notis variorum atrium ac disciplinarum; additis figuris et schematibus ad fidem manuscriptorum codicum*, Paris: Guerin.

Schneider, H. (2010) *Kosmas Indikopleustes: Christliche Topographie – Textkritische, Analyse, Übersetzung, Kommentar*, Turnhout: Brepols.

### ***Culavamsa (the Lesser Chronicle of Sri Lanka)***

Geiger, W. (1925) *The Culavamsa, being the more recent part of the Mahavamsa*, London: Milford.

### ***Faxian Record of Buddhist kingdoms***

Legge, J. (ed. and trans.) (1886) *A record of Buddhistic kingdoms, being an account of the Chinese monk Fa-Hien of his travels in India and Ceylon (A.D. 399-414) in search of the Buddhist books of discipline*, Oxford: the Calrendon Press.

### ***Herodotos Histories***

Blanco, W. (trans.) and Tolbert Roberts, J. (ed.) (1992) *Herodotus: the Histories: new translation, selection, backgrounds, commentaries*, London: W. W. Norton.

### ***Justinian I Body of civil law, Codex***

Krueger, P. (1929) *Corpus iuris civilis, vol. 2, Codex Iustinianus, recognovit et retractavit Paulus Krueger*, Berlin: Weidmann.

Scott, S. P. (ed. and trans.) (1932) *The civil law, including the twelve tables, the institutes of Gaius, the rules of Ulpian, the opinions of Paulus, the enactments of Justinian, and the constitutions of Leo. Translated from the original Latin, edited, and compared with all accessible systems of jurisprudence ancient and modern*, volume 2, Cincinnati: Central Trust Co.

***Mahavamsa (the Great Chronicle of Sri Lanka)***

Geiger, W. (1912) *Mahavamsa: Great Chronicle of Ceylon translated into English by Wilhelm Geiger, assisted by Madel Haynes Bode, under the patronage of the government of Ceylon*, London: Pali Text Society.

----. (1905) *Dipavamsa und Mahavamsa und die geschichtliche Überlieferung in Ceylon*, Leipzig: Deichert.

***Marcian of Heraklea Periplous of the exterior sea***

*Standard edition used for quotations. All translations by R. Darley unless otherwise stated:*

Müller, C. (1855) *Geographi graeci minores*, volume 1, Paris: A. F. Didot.

***Periplous of the Erythreian Sea***

*Standard edition used for quotations and translations:*

Casson, L. (1989) *The Periplus Maris Erythraei: text with introduction, translation, and commentary*, Princeton: Princeton University Press.

*Manuscript available online:*

Universitätsbibliothek Heidelberg, digitale Bibliothek: <http://digi.ub.uni-heidelberg.de/diglit/cpgraec398/0084?sid=2b9be253030467d8d0775d1d129c4811> (accessed 04/10/2012).

*Other editions cited:*

Belfiore, S. (2004) *Il periplo del Mare Eritreo di anonimo del I. sec. D. C. e altri testi sul commercio fra Roma e l'Oriente attraverso l'Oceano Indiano a la Via della Seta*, Rome: Societa Geografica Italiana.

Dietrich, H. T. (1883) *Der Periplus des erythräischen Meeres von einem Unbekannten. Griechisch und deutsch mit kritischen und erklärenden Anmerkungen nebst vollständigem Wörterverzeichnis von B. Fabricius*, Leipzig: Veit [reprint of Fabricius (1883) with additional discussion and prefatory material].

Epherino Medico, S. G. A. (1533) *Arriani et Hannonis Periplus: Plutarchus De fluminibus et montibus: Strabonis Epitome*, Froben: Basileae.

Fabricius, B. (1883) *Der Periplus des Erythräischen Meeres von einem Unbekannten*, Leipzig: Veit und Comp.

Frisk, H. (1927) *Le Périphe de la Mer Erythrée*, Göteborg: Elanders boktryckeri aktiebolag.

Huntingford, G. W. B. (1980) *The Periplus of the Erythraean Sea by an unknown author with some extracts from Agatharkhides 'On the Erythraean Sea'*, London: Hakluyt Society.

McCrinkle, J. W. (1879) *The commerce and navigation of the Erythraean Sea: being a translation of the "Periplus maris Erythraei" by an anonymous writer and partly from Arrian's account of the voyage of the Nearkhos from the mouth of the Indus to the head of the Persian Gulf*, Calcutta: Thacker, Spink and Co.

Ramusio, G. B. (1550) *Primo volume delle navigationi et vaggi nel qua si contine la descrizione dell'Africa, et del paese del Prete Ianni, on varii viaggi, dal mar Rosso a Calicut, & infin all'isole Molucche, dove nascono le Spetierie et la navigatione attorno il mondo*, Venice.

Schoff, W. H. (1912) *The Periplus of the Erythraean Sea: travel and trade in the Indian Ocean*, New York: Longmans, Green and Co.

Vincent, W. (1807) *The commerce and navigation of the ancients in the Indian Ocean, Volume One: the voyage of Nearchus from the Indus to the Euphrates*, 2<sup>nd</sup> edition, London: T. Cadell and W. Davies.

Vincent, W. (1807) *The commerce and navigation of the ancients in the Indian Ocean, Volume Two: the Periplus of the Erythraean Sea*, 2<sup>nd</sup> edition, London: T. Cadell and W. Davies.

### ***Periplus of Hanno the Carthaginian***

*Manuscript available online:*

Universitätsbibliothek Heidelberg, digitale Bibliothek: <http://digi.ub.uni-heidelberg.de/diglit/cpgraec398/0113?sid=2b9be253030467d8d0775d1d129c4811> (accessed 04/10/2012).

*Editions cited:*

Blomqvist, J. (1979) *The date and origin of the Greek version of Hanno's Periplus: with an edition of the text and a translation*, Lund: Liber Läromedel/Gleerup.

Oikonomides, A. N. (ed.) (1977) *Periplus or circumnavigation of Africa: Greek text with facing English translation, commentary and notes and facsimile of Codex Palatinus Gr. 398 with extracts from W. H. Schodd, E. H. Banbury and the complete edition by F. Kluge*, Chicago: Ares.

Ramin, J. (1976) *Le Périphe d'Hannon*, Oxford: British Archaeological Reports.

### **Photios *Bibliotheka***

Freese, J. H. (ed. and trans.) (1920) *The library of Photius*, London: the Macmillan Company.

### **Pliny the Elder *Natural History***

*Standard edition used for quotations and translations:*

Rackham, H. (ed. and trans.) (1952) *Pliny, Natural history: volume 9, Books 33-35*, Cambridge (MA): Harvard University Press.

----. (ed. and trans.) (1942) *Pliny, Natural history: volume 2, Books 3-7*, Cambridge (MA): Harvard University Press.

### **Pliny the Younger *Letters***

Lewis, J. D. (ed. and trans.) (1879) *The letters of the younger Pliny*, London: Trübner.

### **Prokopios *History of the Wars***

*Standard edition used for quotations and translations:*

Dewing, H. B. (ed. and trans.) (1924) *Procopius, History of the wars, Books 6-7*, Cambridge (MA): Harvard University Press.

----. (ed. and trans.) (1914) *Procopius, History of the wars, Books 1-2*, London: William Heinemann.

### **Propertius *Elegies***

*Standard edition used for quotations:*

Hutchinson, G. O. (ed.) (2006) *Elegies, Propertius, Book 4*, Cambridge: Cambridge University.

### **Pseudo-Skylax *Periplous of the Euxine Sea***

Counillon, P. (2004) Pseudo-Skylax, *Le Périples du Pont-Euxin*, Bordeaux: Ausonius.

### **Ptolemy *Geography***

Berggren, J. L. and Jones, A. (ed. and trans.) (2000) *Ptolemy's Geography: an annotated translation of the theoretical chapters*, New York: Princeton University Press.

Stevenson, E. L. (ed. and trans.) (1932) *The Geography of Claudius Ptolemy, translated and edited by Edward Luther Stevenson, with an introduction by Joseph Fischer*, New York: New York Public Library.

### **Strabo *Geography***

Jones, H. L., (ed. and trans.) (1966) *The Geography of Strabo, volume 7: Books 15-16*, Cambridge (MA): Harvard University Press.

----, (ed. and trans.) (1961) *The Geography of Strabo, volume 5: Books 10-12*, Cambridge (MA): Harvard University Press.

----, (ed. and trans.) (1959) *The Geography of Strabo, volume 8: Book 17*, Cambridge (MA): Harvard University Press.

### **Theodosian Code**

Koptev, A. (2013) 'Imperatoris Theodosianii Codex, Liber duodecimus' on Lassard, Y. and Koptev, A. *The Roman Law Library*, <http://webu2.upmf-grenoble.fr/DroitRomain/index.htm>: accessed 02/09/2013.

### **Xuanzang Buddhist records of the western world**

Beal, S. (1884) *Si-Yu-Ki: Buddhist records of the western world, by Hiuen Tsiang*, Delhi, Oriental Books Corporation (reprint 1969).

### **Yijing Biography of eminent monks who went to the western world**

Lahiri, L. (ed. and trans.) (1986) *Chinese monks in India, Biography of eminent monks who went to the western world in search of the law during the Great Tang dynasty, by I-ching*, Delhi: Motilal.

## **SECONDARY READINGS**

Abdullah, Y. M. (1995) 'The city of al-Sawā in the *Periplus of the Erythraean Sea*' *Arabian Archaeology and Epigraphy* 6: 259-69.

Abraham, S. A. (2009) 'Strategies for surface documentation at the Early Historic site of Pattanam, Kerala: the Malabar Region Archaeological Survey' in Tomber, R., Blue, L. and Abraham, S. (eds) *Migrations, trade and people, Part 1: Indian Ocean commerce and the archaeology of western India*, London: British Association for South Asian Studies, 14-28.

Abu Lughod, J. L. (1989) *Before European hegemony: the world system A.D. 1250-1350*, New York: Oxford University Press.

Albu, E. (2008) 'Rethinking the Peutinger Map' in Talbert, R. J. A. and Unger, R.W. (eds) *Cartography in antiquity and the Middle Ages: fresh perspectives, new methods*, Leiden: Brill, 111-119.

----. (2005) 'Imperial geography and the medieval Peutinger Map', *Imago mundi: the international journal for the history of cartography* 57: 136-48.

Album, S. and Gyselen, R. (2003) *Sylloge nummorum Sasanidarum Paris – Berlin – Wien, Band I: Ardashir I – Shapur I*, Vienna: Austrian Academy of Sciences Press.

Alam, M. (2011) 'Coinage, prestige and identity: from Rome to Persepolis and China' in Bhandare, S. and Garg, S. (eds) *Felicitas: essays in numismatics, epigraphy and history in honour of Joe Cribb*, Mumbai: Reesha Books International, 35-51.

- Alston, R. (1998) 'Trade and the city in Roman Egypt' in Parkins, H. and Smith, C. (eds) *Trade, traders and the ancient city*, London: Routledge, 168-202.
- Anastos, M. V. (1946) 'The Alexandrian origin of the "Christian Topography" of Cosmas Indicopleustes' *Dumbarton Oaks Papers* 3: 73-80.
- Andhra Pradesh State Department of Archaeology, <http://museums.ap.nic.in/apsm.htm>: consulted 20/12/2011.
- Andreau, J. (1999) *Banking and business in the Roman world*, translated by Lloyd, J., Cambridge: Cambridge University Press.
- André, J. and Filliozat, J. (1986) *L'Inde vue de Rome*, Paris: Société d'édition les belles lettres.
- Anfray, F. (1974) 'Deux villes axoumites: Adoulis et Matara' in Thomas Leiper Kane Collection (Library of Congress, Hebraic Section) *VI Congresso internazionale di studi Etiopici (1972)*, Rome: Accademia nazionale dei Lincei, 745-65.
- . (1973) 'Nouveaux sites antiques' *Journal of Ethiopian Studies* 11.2: 13-20.
- . (1972) 'L'archéologie d'Axoum en 1972', *Paideuma* 18:60-78.
- . (1965) 'Matara: deuxième, troisième et quatrième campagnes de fouilles', *Annales d'Éthiopie* 6: 49-86.
- . (1963) 'Notre connaissance du passé éthiopien d'après les travaux archéologiques récents' in Beckingham, C. F. and Ullendorff, E. (eds) *Ethiopian studies: papers read at the second international conference of Ethiopian studies*, Manchester: Manchester University Press, 247-49.
- Aravamuthan, T. G. (1925) *The Kaveri, the Maukharis and the Sangam Age*, Madras: the University of Madras.
- Archaeological Survey of Ceylon (1923-4) *Archaeological Survey of Ceylong, annual report 1923-4*, Colombo: Government Press.
- Arjava, A. (2005) 'The mystery cloud of 536 CE in the Mediterranean sources', *Dumbarton Oaks Papers* 59: 73-94.
- Avanzini, A. (ed.) (2008) *A port in Arabia between Rome and the Indian Ocean (3<sup>rd</sup> C. BC-5<sup>th</sup> C. AD): Khor Rori report 2*, Rome: L'Erma di Bretschneider.
- . (ed.) (2002) *Khor Rori report 1*, Pisa: Edizioni Plus.
- . (2000) 'Excavations and restoration of the complex of Khor Rori, interim report (1999-2000)' *Egitto e Vicino Oriente* 22-3: 189-228.



- Avanzini, A., Benvenuti, C., Buffa, V. *et al.* (2002) 'Excavations and restoration of the complex of Khor Rori, interim report (October 2001-April 2002)' *Egitto e Vicino Oriente* 25, 5-50.
- Avanzini, A., Buffa, V., Lombardi, A. *et al.* (2001) 'Excavations and restoration of the complex of Khor Rori, interim report (October 2000-April 2001)' *Egitto e Vicino Oriente* 24: 5-63.
- Avanzini, A. and Orazi, R. (2001) 'The construction phases of Khor Rori's monumental gate' *Arabian Archaeology and Epigraphy* 12.2: 249-59.
- Back, M. (1978) *Die Sassanidischen Staatsinschriften*, Leiden: Brill.
- Badhreenath, S. (2011) 'Mamallapuram, the port of the Pallavas' unpublished paper delivered at the conference 'Ports of the Indian Ocean, from the Red Sea to the Bay of Bengal' (23<sup>rd</sup>-27<sup>th</sup> February 2011), *Les sociétés méditerranéennes et l'océan Indien*.
- Bagnall, R. S., Helms, C. and Verhoogt, A. M. F. W. (2005) *Documents from Berenike: texts from the 1999-2001 seasons, volume 2*, Brussels: Fondation Égyptologique Reine Élisabeth.
- . (2000) *Documents from Berenike, volume 1: Greek ostraka from the 1996-1998 seasons*, Brussels: Fondation Égyptologique Reine Élisabeth.
- Bagnall, R. S. (1993) *Egypt in late antiquity*, Princeton: Princeton University Press.
- Bailie, M. (1994) 'Dendrochronology raises questions about the nature of the AD 536 dust-veil event' *The Holocene* 4: 212-17.
- Bajpai, K. D. (1992) 'Coins from Eran excavations: a chronological analysis' in MacDowall, D. W., Sharma, S. and Garg, S. (eds) *Indian numismatics, history, art and culture: essays in honour of Parmeshwari Lal Gupta*, volume 1, Delhi: Agamkala Prakashan, 79-85.
- Banaji, J. (2006) 'Precious metal coinages and monetary expansion in late antiquity' in De Romanis and Sorda, S. (eds) *Dal Denarius al Dinar: l'orient e la moneta Romana: atti dell'incontro di studio, Roma 16-18 settembre 2004*, Rome: Istituto Italiano di Numismatica, 265-303.
- Barnard, H. and Rose, P. J. (2007) 'Eastern Desert Ware from Berenike and Kab Marfu'a' in Sidebotham, S. E. and Wendrich, Z. (eds) *Berenike 1999/2000: report on the excavations at Berenike, including excavations in Wadi Kalalat and Siket, and the survey of the Mons Smaragdus region*, Los Angeles: Cotsen Institute of Archaeology, University of California, 183-210.

- Bard, K. A., Fattovich, R., Manzo, A. *et al.* (1997) 'Archaeological investigations at Bieta Giyorgis (Aksum), Ethiopia: 1993-1995 field seasons' *Journal of Field Archaeology* 24.4: 387-403.
- Barrett, D. (1954) *Sculptures from Amaravati in the British Museum*, London: the British Museum.
- Baumgärtner, I. (2002) 'Die Welt im kartographischen Blick: Zur Veränderbarkeit mittelalterlicher Weltkarten am Beispiel der Beatus-tradition vom 10. Bis 13. Jahrhunderte' in Ehbrecht, W., Lempen, A., Post, F.-J. *et al.* (eds) *Der weite Blick des Historikers: Einsichten in Kultur-, Landes- und Stadtgeschichte. Peter Johanek zum 65. Geburtstag*, Weimar and Vienna: Böhlau Verlag, 527-49.
- Bayly, C. A. (2003) *The birth of the modern world 1780-1914: global connections and comparisons*, Oxford: Blackwell Publishing.
- BBC News Africa (2013) 'Eritrea profile', <http://www.bbc.co.uk/news/world-africa-13349078>: accessed 3/7/2013.
- Beglar, J. D. (1882) *Report of tours in the southeastern provinces in 1874-75 and 1875-76*, Calcutta: Office of the superintendent of Government printing.
- Begley, V. (1993) 'New investigations at the port of Arikamedu' *Journal of Roman Archaeology* 6: 93-108.
- . (1991) 'Ceramic evidence for pre-*Periplus* trade on the Indian coasts' in Begley, V. and De Puma, R. D. (eds) *Rome and India: the ancient sea trade*, Madison: University of Wisconsin Press, 157-96.
- . (1988) 'Rouletted ware at Arikamedu' *American Journal of Archaeology* 92.3: 427-40.
- . (1983) 'New investigations at the port of Arikamedu' *Journal of Roman Archaeology* 6: 93-108.
- Begley, V. and De Puma, R. D. (eds) (1991) *Rome and India: the ancient sea trade*, Madison: University of Wisconsin Press.
- Begley, V., Francis Jr., P., Karashima, N. *et al.* (1996) *The ancient port of Arikamedu: new excavations and researches 1989-92*, Pondicherry: Centre d'histoire et d'archéologie, École française d'Extrême-Orient.
- Bekker-Nielsen, T. (1988) 'Terra incognita: the subjective geography of the Roman Empire' in Damsgaard-Madsen, A., Christiansen, E. and E. Hallager (eds) *Studies in ancient history and numismatics presented to Rudi Thomsen*, Århus: Århus University Press, 148-61.

- Bellina, B. (2014) 'Southeast Asia and the early maritime Silk Road' in Guy, J. (ed.) *Lost kingdoms: Hindu-Buddhist sculpture of early southeast Asia*, New Haven and London: Yale University Press for the Metropolitan Museum of Art, New York, 22-4.
- . (2013) 'The Philippines and the circulation and exchanges in the South China Sea during the Late Prehistoric period', *Actes Sud. Musee du quai Branly*, Unpaginated.
- . (2008) 'Dossier – the archaeology of prehistoric trans-Asiatic exchange: technological and settlement evidence from Khao Sam Kaeo', *Bulletin de l'Ecole Française d'Extrême-Orient* 93, 249-390.
- . (2003) 'Beads, social change and interaction between India and South-east Asia', *Antiquity* 77, 285-97.
- Bellina, B. and Glover, I. (2004) 'The archaeology of early contact with India and the Mediterranean world, from the fourth century B.C. to the fourth century A.D.' in Glover, I. and Belwood, P. (eds) *Southeast Asia: from prehistory to history*, New York: Routledge Curzon, 68-87.
- Bellina, B. *et al.* (2001) 'The development of coastal polities in the Upper Thai-Malay Peninsula' in Revire, N. and Murphy, S. (eds) *Before Siam was born: new insights on the art and archaeology of pre-modern Thailand and its neighbouring regions*, Bangkok: River Books, 69-89.
- Bellinger, A. R. (1966) *Catalogue of the Byzantine coins in the Dumbarton Oaks collection and in the Whittemore collection*, volume 1, Washington, D.C.: Dumbarton Oaks Research Library and Collection.
- Bellinger, A. R. and Grierson, P. (1999) *Catalogue of the Byzantine coins in the Dumbarton Oaks collection and in the Whittemore collection*, volume 4.1, Washington, D.C.: Dumbarton Oaks Research Library and Collection.
- Bentley, J. H., Bridenthal, R. and Wigen, K. (eds) (2007) *Seascapes, maritime histories, littoral cultures, and transoceanic exchanges*, Honolulu: University of Hawai'i Press.
- Berghaus, P. (2006) 'Strange mould links out of the Tirukoillur hoard' in Nagaswamy, R., Nagaswamy, R. V. *et al.* (eds) *Sangam numismatics and cultural history: essays in honour of Dr R. Krishnamurthy*, Chennai: New Era Publications, 11-20.
- . (1998) 'Republican and early Roman imperial *denarii* from India' in Jha, D. N. and Garg, S. (eds) *Ex moneta: essays on numismatics in honour of Dr David W. MacDowall*, New Delhi: Harman Publishing House, 119-27.
- . (1994) 'Two imitations out of the Valluvaly hoard of Roman *aurei* (Kerala) 1983' *Studies in South Indian Coins* 4: 33-42.

- . (1993a) 'Drei Aurei von Gootiparti (Andhra Pradesh, Indien)' *Numismatische Gesellschaft zu Berlin Festschrift* 3: 75-82.
- . (1993b) 'Indian imitations of Roman coins' in Hackens, T., Moucharte, G. *et al.* (eds) *Proceedings of the XIth International Numismatic Congress: organized for the 150th anniversary of the Société Royale de Numismatique de Belgique, Brussels, September 8th-13th 1991*, Louvain-la-Neuve: Association Professeur Marcel Hoc, Vol. 2: 305-10.
- . (1993c) 'Roman aurei from Kumbalam, Ernahulam District, Kerala' *Studies in South Indian Coins* 3: 29-42.
- . (1992a) 'FELICITAS SAECULI in Indien' in Brehm, O. and Klie, S. (eds) *Mousikos Anyr: Festschrift für Max Wegner zum 90. Geburtstag*, Bonn: Dr Rudolf Habelt GMBH, 11-16.
- . (1992b) 'Roman coins from India and their imitations' in Jha, A. K. (ed.) *Coinage, trade and economy: January 8<sup>th</sup>-11<sup>th</sup>, 1991*, Nashik: Indian Institute of Research in Numismatic Studies, 108-21.
- . (1992c) 'Three denarii of Tiberius from Arikamedu' in MacDowall, D. W., Sharma, S. and Garg, S. (eds) *Indian numismatics, history, art and culture: essays in honour of Parmeshwari Lal Gupta*, New Delhi: Agam Kala Prakashan, Vol. 1: 95-8.
- . (1991) 'Roman coins from India and their imitation' in Jha, A. K. (ed.) *Coinage, trade and economy: January 8<sup>th</sup>-11<sup>th</sup>, 1991*, Nashik: Indian Institute of Research in Numismatic Studies, 108-21.
- . (1990) 'Römische Münzen in Indien' in Rainer, A. (ed.) *Handel und Verkehr im Spiegel der Münzen*, Speyer: Numismatische Gesellschaft Speyer, 67-89.
- Bernard, É., Drewes, A. J. and Schneider, R. (2000) *Recueil des inscriptions de l'Ethiopie des périodes pré-axoumite et axoumite: Traductions et commentaires*, Vol. 3, Paris: Diffusion de Boccard.
- Bernard, P. (1985) *Fouilles d'Aï Khanoum. 4, Les monnaies hors trésors, questions d'histoire gréco-bactrienne*, Paris: Diffusion de Boccard.
- . (1973) *Fouilles d'Aï Khanoum 1, Campagnes 1965, 1966, 1967, 1968 : rapport préliminaire*, Paris: Klincksieck.
- Bernard, P., Guillaume, O., Francfort, H.-P. *et al* (1984) *Fouilles d'Aï Khanoum / 3,2 Le sanctuaire du temple à niches indentées : les trouvailles*, Paris: Diffusion de Boccard.
- Bhandarkar, D. R. (1921) *The Carmichael lectures 1921: lectures on ancient Indian numismatics*, 1990 reprint, Delhi: Asian Educational Series.

- Bidie, G. (1874) *Catalogue of coins in the Madras Museum*, Madras: Government Press.
- Blackburn, M. (2005) 'Coin finds from Kaupang: a Viking emporium on the North Sea' India' in Alfaro, C., Marcos, C. and Otero, P. (eds) *XIII Congreso Internacional de Numismática (Madrid 2003). Actas – Proceedings – Actes*, volume 2, Madrid, Servicio de Publicaciones del Ministerio de Cultura, 1143-49.
- Blue, L. (2002a) 'Myos Hormos/Quseir al-Qadim. A Roman and Islamic port on the Red Sea coast of Egypt – a maritime perspective' *Proceedings of the Seminar for Arabian Studies* 32: 139-50.
- Boozer, A. L. (2012) 'Globalizing Mediterranean identities: the overlapping spheres of Egyptian, Greek and Roman worlds at Trimithis' *Journal of Mediterranean Archaeology* 25.2: 93-116.
- Bopearachchi, O. (2006a) 'Circulation of Roman and Byzantine gold coins in Sri Lanka: fact or fiction?' in De Romanis and Sorda, S. (eds) *Dal Denarius al Dinar: l'oriente e la moneta Romana: atti dell'incontro di studio, Roma 16-18 settembre 2004*, Rome: Istituto Italiano di Numismatica, 181-200.
- . (2006b) 'Coins' in Coningham, R. (ed.) *Anuradhapura: the British-Sri Lankan excavations at Anuradhapura Salgaha Watta*, Oxford: British Archaeological Reports, Vol. 2: 7-26.
- . (2004) 'New archaeological evidence on cultural and commercial relationships between ancient Sri Lanka and Tamil Nadu' *Journal of Interdisciplinary Studies in History and Archaeology* 1, 60-72.
- . (2002) 'Archaeological evidence on shipping communities of Sri Lanka' in Parkin, D. and Barnes, R. (eds) *Ships and the development of maritime technology in the Indian Ocean*, London: Routledge Curzon, 92-127.
- . (1998) 'Archaeological evidence on changing patterns of international trade relations of Ancient Sri Lanka' in Bopearachchi, O. and Weerakkody, D. P. M. (eds) *Origins, evolution and circulation of foreign coins*, New Delhi: Manohar, 133-78.
- . (1997) 'Forward' in Weerakkody, D. P. M. *Taprobanê: ancient Sri Lanka as known to Greeks and Romans*, Turnhout: Brepols, ix-xxii.
- . (1995) 'Recent discoveries of ancient foreign coins, hitherto unknown in Sri Lankan context' *Sesquicentennial Commemorative Volume, Royal Asiatic Society of Sri Lanka 1845-1995*, 127-39, pl. 1 and 2.
- . (1992) 'Le commerce maritime entre Rome et Sri Lanka D'après les données numismatiques' *Revue des études anciennes* 94: 107-21.
- . (1991) *Monnaies Greco-bactriennes et indo-grecques*, Paris: Bibliothèque nationale.

- Bopearachchi, O. and Weerakkody, D. P. M. (eds) (1998) *Origin, evolution and circulation of foreign coins in the Indian Ocean*, New Delhi: Manohar.
- Borrell, B., Bellina, B. *et al.* (2014) 'Contacts between the Upper Thai-Malay Peninsula and the Mediterranean world' in Revire, N. and Murphy, S. (eds) *Before Siam: essays in art and archaeology*, Bangkok: River Books, 99-117.
- Bos, J. E. M. E. (2007) 'Jar stoppers, seals, and lids, 1999 seasons' in Sidebotham, S. E. and Wendrich, Z. (eds) *Berenike 1999/2000: report on the excavations at Berenike, including excavations in Wadi Kalalat and Siket, and the survey of the Mons Smaragdus region*, Los Angeles: Cotsen Institute of Archaeology, University of California, 258-69.
- Bose, S. K. (2004) 'Some notes on schroff marking on Jaintia coins' *Journal of the Numismatic Society of India* 66, 85-9.
- Boulnois, L. (2005) *Silk road: monks, warriors and merchants on the silk road*, London: Odyssey Books.
- Boussac, M. F. and Salles, J.-F. (eds) (1995) *Athens, Aden and Arikamedu: essays on the interrelations between India and the eastern Mediterranean*, New Delhi: Manohar Publishers.
- Bowsher, J. M. C. (1990) 'Early Nabataean coinage' *ARAM Periodical, First International Conference – the Nabataeans* 221-8.
- Bowersock, G. W. (1995) *Martyrdom and Rome*, Cambridge, Cambridge University Press.
- . (1971) 'A report on Arabia Provincia' *Journal of Roman Studies* 61: 219-242.
- Bowman, A., Cameron, A. and Garnsey, P. (eds) (2005) *The Cambridge ancient history, volume 12: the crisis of empire, A.D. 193-337*, 2<sup>nd</sup> edition, Cambridge: Cambridge University Press.
- Bowman, A., Champlin, E. and Lintott, A. (eds) (1996) *The Cambridge ancient history, volume 10: the Augustan empire, 43 B.C.-A.D. 69*, 2<sup>nd</sup> edition, Cambridge: Cambridge University Press.
- Bowman, A., Garnsey, P. and Rathbone, D. (eds) (2000) *The Cambridge ancient history, volume 11: the high empire, A.D. 70-192*, 2<sup>nd</sup> edition, Cambridge: Cambridge University Press.
- Boxhall, P. (1989) 'Arabian seafaring in the Indian Ocean' *Asian Affairs* 20: 287-95.
- Brancaccio, P. (2005) 'Sātavāhana terracottas: connections with the Hellenistic tradition' *East and West* 55.1: 55-69.

- Bridgman, R. (2011) 'Celadons and Qingbai sherds: preliminary thoughts on the medieval ceramics' in Peacock, D. and Blue, L. (eds) *Myos Hormos – Quseir al-Qadim: Roman and Islamic ports on the Red Sea, volume 2: finds from the excavations 1999-2003*, Oxford, Archaeopress, 43-6.
- Brubaker, L. (1977) 'The relationship between text and image in the Byzantine MSS of Cosmas Indicopleustes' *Byzantinische Zeitschrift* 70: 42-57.
- Bruyère, B. (1966) *Fouilles de Clyasma-Qolzoum (Suez) 1930-1932*, Cairo: Institut français d'archéologie orientale du Caire.
- Buttrey, T. (1993) 'Calculating ancient coin production: facts and fantasies' *Numismatic Chronicle* 153: 335-51.
- Bryce, J. (1914) *The ancient Roman empire and the British Empire in India: the diffusion of Roman and English law throughout the world*, London: Oxford University Press.
- Burke, K. S. (2004) 'Quseir al-Qadim' *Oriental Institute annual report 2003-2004*, Chicago: Oriental Institute of the University of Chicago, 125-32.
- Burnett, A. (1998) 'Roman coins from Sri Lanka' in Bopearachchi, O. and Weerakkody, D. P. M. (eds) *Origin, evolution and circulation of foreign coins in the Indian Ocean*, New Delhi: Manohar, 179-90.
- Butzer, K. W. (1981) 'Rise and fall of Axum, Ethiopia: a geo-archaeological interpretation' *American Antiquity* 46.3: 471-95.
- Campbell Tufnell, R. H. (1889) *Hints to coin-collectors in southern India*, Madras: Government Press.
- Cappers, R. T. J. (2006) *Roman food-prints at Berenike: archaeological evidence of trade and subsistence in the eastern desert of Egypt*, Los Angeles: Cotsen Institute of Archaeology.
- Carlson, D. (2010) 'INA in Sri Lanka, Pearl of the Indian Ocean' *Institute of Nautical Archaeology Annual*, 89-59.
- . (1999) 'Archaeobotanical evidence of Roman trade with India' in Ray, H. P. (ed.) *Archaeology of seafaring: the Indian Ocean in the ancient world*, Princeton: Princeton University Press.
- Carswell, J. (1991) 'The port of Mantai, Sri Lanka' in Begley, V. and De Puma, R. D. (eds) *Rome and India: the ancient sea trade*, Madison: The University of Wisconsin Press, 197-215.
- Carswell, J., Deraniyagala, S. U. and Graham, A. J. (eds) (2013) *Mantai: city by the sea*, Aichwald: Linden Soft Verlag.

- Carswell, J. and Prickett, M. E. (1984) 'Mantai 1980: a preliminary investigation' *Ancient Ceylon* 5, 3-80.
- Carson, R. A. G. (1980) 'Late Roman and early Byzantine solidi from India' *Numismatic Digest* 4 (December): 20-23.
- Carson, R. A. G., Kent, J. P. C. and Burnett, A. M. (1994) *The Roman Imperial Coinage*, vol. 10, *The Empire divided and the fall of the western parts, A.D. 395-491*, London: Spink.
- Casal, J. M. (1949) *Fouilles de Virampatnam-Arikamedu*, Paris: Imprimerie Nationale.
- Casal, J. M. and Casal, G. (1956) *Site urbain et sites Funéraires des environs de Pondichery*, Paris: Imprimerie Nationale.
- Casson, L. (1990) 'New light on maritime loans: P. Vindob. G 40822' *Zeitschrift für Papyrologie und Epigraphik* 84: 195-206.
- . (1987) 'Periplus Maris Erythraei 60' *The Classical Quarterly* 37.1: 233-35.
- . (1986a) 'P. Vindob. G 40822 and the shipping of goods from India' *Bulletin of the American Society of Papyrologists* 23: 73-9.
- . (1986b) 'The location of Tabai (Periplus Maris Erythraei 12-13)' *The Journal of Hellenic Studies* 106: 179-82.
- . (1984) 'The sea route to India: Periplus Maris Erythraei 57' *The Classical Quarterly* 34.2: 473-79.
- . (1983a) 'Greek and Roman clothing: some technical terms' *Glotta* 61.3/4: 193-207.
- . (1983b) 'Sakas versus Andhras in the Periplus Maris Erythraei' *Journal of the Economic and Social History of the Orient* 26.2: 164-77.
- . (1982a) 'Periplus Maris Erythraei 36: teak, not sandalwood' *The Classical Quarterly* 32.1: 181-83.
- . (1982b) 'Periplus Maris Erythraei: notes on the text' *The Journal of Hellenic Studies* 102: 204-206.
- . (1980a) 'Periplus Maris Erythraei: three notes on the text' *The Classical Quarterly* 30.2: 495-97.
- . (1980b) 'Rome's trade with the East: the sea voyage to Africa and India' *Transactions of the American Philological Association (1974-)* 110: 21-36.
- Chakrabarti, D. K. (2003) *Archaeology in the Third World: a history of Indian archaeology since 1947*, New Delhi: D. K. Printworld (P) Ltd.



- . (1982) 'The development of archaeology in the Indian subcontinent' *World Archaeology* 13.3:326-44.
- Chakravarti, R. (2002) 'Seafarings, ships and ship owners: India and the Indian Ocean (A.D. 700-1500)' in Parkin, D. and Barnes, R. (eds) *Ships and the development of maritime technology in the Indian Ocean*, London: Routledge Curzon, 28-61.
- Chami, F. A. (1999) 'Graeco-Roman trade link and the Bantu migration theory' *Anthropos* 94.1/1: 205-15.
- . (1996) 'Roman beads from the Rufiji Delta, Tanzania: first incontrovertible archaeological link with the Periplus' *Current Anthropology* 40.2: 237-41.
- Champakalakshmi, R. (1987) 'Urbanisation in south India: the role of ideology and polity' *Social Scientist* 15.8/9: 67-117.
- . (1981) 'Peasant, state and society in medieval south India: a review article' *Indian Economic and Social History Review* 18: 411-26.
- Chanmugam, P. K. and Jayawardene, F. L. W. (1954) 'Skeletal remains from Tirukketiswaram' *Ceylon Journal of Science, Section GV* 11, 65-8.
- Charlesworth, M. P. (1926) *Trade routes and commerce of the Roman Empire*, Cambridge: Cambridge University Press.
- Cherian, P. (2013) *The seventh season Pattanam excavation – 2013: an international project in material culture studies*, Thiruvananthapuram, Kerala Council for Historical Research.
- . (2011a) 'Pattanam archaeological site: the wharf context and the maritime exchanges' in *Collected proceedings of the Asia-Pacific regional conference on underwater cultural heritage*, Kingston (RI): Museum of Underwater Archaeology, <http://www.themua.org/collections/items/show/1204>: accessed 21/09/2013.
- . (2011b) *Pattanam excavations fifth season report*, Trivandrum: Kerala Council for Historical Research. Available electronically: [http://www.keralahistory.ac.in/2011pdf/ptm2011\\_field\\_report.pdf](http://www.keralahistory.ac.in/2011pdf/ptm2011_field_report.pdf): accessed 23/01/2012.
- . (2011c) 'Pattanam: pilgrimage cultural' *Kerala Calling* January: 14-17.
- . (2010) 'Realising the real' *Kerala Calling* July: 26-9.
- . J. (June 18 2010) 'The tales that potsherds tell at Pattanam' *The Hindu* <http://www.thehindu.com/arts/history-and-culture/article472072.ece>: accessed 22/2/2010.

- . (2009a) 'Pattanam in Cochin as a potential world heritage site' in Kutty Nair, T. P. S. (ed.) *India yesterday and today (a Festschrift for Padmabhooshan Prof. Alappat Sreedhara Menon)*, Thiruvananthapuram: Vijayalekshmi Publications, 349-65.
- . (2009b) 'The exchanges between the Early Historic Ports on the Malabar coast and the Red Sea port of Berenike' in XXX and XXX (eds) *Proceedings of the Thirtieth Annual Seminar – Maritime History Society, Mumbai*, Mumbai: Maritime History Society, 65-79.
- . (2008) 'The Muziris Heritage Project and the archaeological research at Pattanam: an overview' in *The living dead and the lost knowledge*, Thiruvananthapuram: Department of Archaeology, Government of Kerala.
- Cherian, P., Nambirajan, M., Rajan, K. *et al.* (2010) *Interim report of Pattanam excavations 2010*, Thiruvananthapuram: Kerala Council for Historical Research.
- Cherian, P., Rajan, K., Selvakumar, V. *et al.* (2009) *Pattanam interim report 2009*, Thiruvananthapuram: Kerala Council for Historical Research.
- . *et al.* (2008) *Pattanam interim report 2008*, Thiruvananthapuram: Kerala Council for Historical Research.
- Cherian, P., Ravi Prasad, G. V., Dutta, K. *et al.* (2009) 'Chronology of Pattanam: a multi-cultural port site on the Malabar coast' *Current Science* 97.2: 235-40.
- Cherian, P. J., Selvakumar, V. and Shajan, K. (2009) 'Maritime traditions of the Malabar coast and the findings from the Pattanam excavations 2007' in Paddayya, K., Joglekar, P. P., Basa, K. K. *et al.* (eds) *Recent research trends in south Asian archaeology*, Pune: Deccan College Postgraduate Research Institute, 321-32.
- . (2007a) 'Evidence for the ancient port of Muciri' *Chemmozhi* 2.1: 26-7.
- . (2007b) *Pattanam interim report 2007*, Thiruvananthapuram: Kerala Council for Historical Research.
- . (2007c) 'Pattanam in the maritime history of south west India' in *Proceedings of the international seminar on marine archaeology*, New Delhi: Indian Navy and Archaeological Survey of India, no pagination.
- . (2007d) 'The Muziris Heritage Project excavations at Pattanam' *Journal of Indian Ocean Archaeology* 4: 1-10.
- Choksy, J. K. (2013) 'Sailors, soldiers, priests, and merchants: reappraising Iran's early connections to Ceylon' *Iranica Antiqua* 48: 363-91.
- Christlein, R. and Natter, K. (1978) *Die Alamannen*, Stuttgart: Theiss.

- Chrysos, E. (1992) 'Byzantine diplomacy, A.D. 300-800: means and ends' in Shepard, J. and Franklin, S. (eds) *Byzantine diplomacy*, Aldershot: Variorum, 25-39.
- Clark, G. (2011) *Late antiquity: a very short introduction*, Oxford: Oxford University Press.
- Clark, T. L. (2008) *Imaging the cosmos: The Christian Topography by Kosmas Indikopleustes* unpublished PhD thesis, Philadelphia: Temple University.
- Colás, A. (2007) *Empire*, London: Wiley Blackwell.
- Coningham, R. (ed.) (2006) *Anuradhapura. The British-Sri Lankan excavations at Anuradhapura Salgaha Watta 2: the artefacts*, Oxford: BAR International Series 1508.
- Connah, G. (2004) *Forgotten Africa: an introduction to its archaeology*, London: Routledge.
- Contenson, H. d. (1963) 'Les fouilles à Axoum en 1958' *Annales d'Ethiopie* 5:1-16.
- Cook, A. (2006) 'Surveying the seas: establishing the sea routes to the East Indies' in Akerman, J. R. (ed.) *Cartographies of travel and navigation*, Chicago: University of Chicago Press, 69-96.
- Copeland, P. (2011) 'Metal and metal-working' in Peacock, D. and Blue, L. (eds) *Myos Hormos – Quseir al-Qadim: Roman and Islamic ports on the Red Sea, volume 2: finds from the excavations 1999-2003*, Oxford, Archaeopress, 89-120.
- Corcoran, S. (2012) 'Before Constantine' in Lenski, N. E. (ed.) *The Cambridge companion to the age of Constantine*, revised edition, Cambridge: Cambridge University Press, 35-58.
- Correspondent (Nedumbassery) (August 4 2010) 'Muziris project launch by month-end' *The Hindu* <http://www.thehindu.com/arts/history-and-culture/article550026.ece>: accessed 22/02/2010.
- Correspondent (Thiruvananthapuram) (December 15 2010) 'Excavations should produce exploitable results: Minister' *The Hindu* <http://www.thehindu.com/news/states/kerala/article954418.ece>: accessed 22/02/2011.
- Council of the Society of South Asian Studies (1999) *The Society for South Asian Studies: report and accounts for the year ended 31<sup>st</sup> March 1999*, London: Society for South Asian Studies ([http://www.basas.org.uk/pdf/annual\\_reports/annualreport99.pdf](http://www.basas.org.uk/pdf/annual_reports/annualreport99.pdf) accessed 20/12/2011).
- Counillon, P. (2007) 'L'ethnographie dans le Périples du Ps.-Skylax entre Tanaïs et Colchide' in Bresson, A., Ivantchik, A. and Ferrary, J.-L. (eds) *Une koinè pontique:*

*cités grecques, sociétés indigènes et empires mondiaux sur le littoral nord de la Mer Noire (VIIe s. a.C.-IIIe s. p.C.)*, Bordeaux: Ausonius, 37-45.

- Cribb, J. (1996) 'Chinese coin finds from south India and Sri Lanka' in Maheshwari, K. K. and Rath, B. (eds) *Numismatic panorama: essays in the memory of late Shri S. M. Shukula*, New Delhi: Harnam Publishing House, 253-69.
- . (1992) 'Numismatic evidence for the date of the *Periplus*' in MacDowall, D. W., Sharma, S. and Garg, S. (eds) *Indian numismatics: history, art and culture: essays in honour of Dr P. L. Gupta*, volume 1, Delhi: Agamkala Prakashan, 131-45.
- Crook, J. A., Lintott, A. and Rawson, E. (eds) (1994) *The Cambridge ancient history, volume 9: the last age of the Roman republic, 146-43 B.C.*, 2<sup>nd</sup> edition, Cambridge: Cambridge University Press.
- Cunningham, A. (1891) *Coins of ancient India from the earliest times down to the seventh century A.D.*, London: B. Quaritch.
- . (1883) *Book of Indian eras, with tables for calculating Indian dates*, Varanasi: Indological Book House (reprinted 1970).
- . (1871) *The ancient geography of India I. The Buddhist period, including the campaigns of Alexander, and the travels of Hwen-Thsang*, London: Trübner and Co.
- Curtis, V. I., Askari, M. E. and Pendleton, E. (2010) *A sylloge of the Sasanian coins in the National Museum of Iran (Muzeh Melli Iran), Tehran, vol. 1: Ardashir I – Hormizd IV*, London: Royal Numismatic Society in association with the British Institute of Persian Studies.
- D'Alviella, G. (1926) *Ce que l'Inde doit a la grèce: des influences classiques dans la civilization de l'Inde*, Paris: Paul Geuthner.
- Daryaei, T. (2009) 'The Persian Gulf in Late Antiquity: the Sasanian era (200-700 C.E.) in Potts, D. T. (ed.) *The Persian Gulf in history*, New York: Palgrave Macmillan, 57-70.
- Davis, S. (1790) 'Some Roman coins found at Nelore [letter dated 20 March 1788]' *Asiatick Researches* 2: 331.
- Darley, R. (forthcoming) 'Implicit cosmopolitanism' and the commercial role of ancient Lanka' in Strathern, A. and Biedermann, Z. (eds) *Sri Lanka at the crossroads: from Antiquity to Modernity*, Cambridge: Cambridge University Press, pagination TBC.
- Darley, R., Reynolds, D., and Wickham, C. (2014) *Open access journals in humanities and social sciences*, London: The British Academy.

- Day, R. (in press) 'The late Roman copper coins of Karur: a south Indian case study of commerce and heritage management' in Sarma, V. S. and Chenna Reddy, P. (eds) *Sneha Siri: studies in honour of P. Chenna Reddy*, Hyderabad: Department of Museums and Archaeology, Government of Andhra Pradesh.
- . (2012a) 'A tale of 'four' hoards (or unpicking Akki Alur)' *Journal of the Oriental Numismatic Society* 211:5-14.
- . (2012b) 'Exhibition review – Roman coins in south India: the Centenary Exhibition Hall, Government Museum, Chennai (18<sup>th</sup> January-2<sup>nd</sup> February 2011)' *Rosetta* 11: 98-102.
- . (2009) *A catalogue and discussion of the Indo-Greek coinage of Pushkalavati and Taxila in the Fitzwilliam Museum, Cambridge* unpublished MA thesis, Birmingham: University of Birmingham, Institute of Archaeology and Antiquity.
- Decker, M. (2009) 'Export wine trade to west and east' in Mango, M. (ed.) *Byzantine trade, 4<sup>th</sup>-12<sup>th</sup> centuries*, Farnham: Ashgate, 239-52.
- Delano-Smith, C. (2006) 'Milieus of mobility: itineraries, route maps, and road maps' in Akerman, J. R. (ed.) *Cartographies of travel and navigation*, Chicago: University of Chicago Press, 16-68.
- Deo, S. B. (1991) 'Roman trade: recent archaeological discoveries in western India' in Begley, V. and De Puma, R. D. (eds) *Rome and India: the ancient sea trade*, Madison: University of Wisconsin Press, 39-45.
- Depeyrot, G. (2012) 'Economy and society' in Lenski, N. (ed.) *The Cambridge companion to the age of Constantine*, Cambridge: Cambridge University Press, 226-53.
- De Romanis, F. (2008) 'Muziris trade in the Roman economy' *The living dead and the lost knowledge*, Thiruvananthapuram, Department of Archaeology, Government of Kerala, 41-3.
- . (2006) 'Aurei after the trade: western taxes and eastern gifts' in De Romanis and Sorda, S. (eds) *Dal Denarius al Dinar: l'oriente e la moneta Romana: atti dell'incontro di studio, Roma 16-18 settembre 2004*, Rome: Istituto Italiano di Numismatica, 55-82.
- . (1997) 'Romanukharat̥ṭha and Taprobane: relations between Rome and Sri Lanka in the first century A.D.' in De Romanis, F. and Tchernia, A. (eds) *Crossings: early Mediterranean contacts with India*, New Delhi: Manohar Publishers, 161-237.
- Desanges, J. (1969) 'D'Axoum à l'Assam, aux portes de la Chine: Le Voyage du "Scholasticus de Thèbes" (entre 360 et 500 après J.-C.)' *Historia: Zeitschrift für alte Geschichte* 18.5: 627-39.
- Deva, K. and Misra, V. K. (1961) *Vaisali Excavations 1950*, Vaisali: Vaisali Sangh.

- Devendra, S. (2002) 'Pre-modern Sri Lankan ships' in Parkin, D. and Barnes, R. (eds) *Ships and the development of maritime technology in the Indian Ocean*, London: Routledge Curzon, 128-73.
- Dihle, A. (1965) *Umstrittene Daten: Untersuchungen zum Auftreten der Griechen am Roten Meer*, Cologne: Westdeutscher Verlag.
- Dilke, O. A. W. (1987a) 'Cartography in the ancient world: an introduction' in Harley, J. B. and Woodward, D. (eds) *The history of cartography, volume 1: cartography in prehistoric, ancient, and medieval Europe and the Mediterranean*, Chicago: Chicago University Press, 105-6.
- . (1987b) 'Itineraries and geographical maps in the early and late Roman empires' in Harley, J. B. and Woodward, D. (eds) *The history of cartography, volume 1: cartography in prehistoric, ancient, and medieval Europe and the Mediterranean*, Chicago: Chicago University Press, 234-42.
- Dinamalar Corporate Information,  
<http://www.indiantelevision.com/advt/dinamalar/dinamalar.htm>: consulted 04/16/2013.
- Dittrich, U.-B. (1987) 'Die Wirtschaftsstruktur der Quaden, Markomannen und Sarmaten im mittleren Donauraum und ihre Handelsbeziehungen mit Rom' *Münstersche Beiträge zur antiken Handelsgeschichte* 6.1: 9-30.
- DK Agencies, New Delhi, <https://www.dkagencies.com/>: accessed 14/6/2011.
- Dolinka, B. J. (2003) *Nabataean Aila (Aqaba, Jordan) from a ceramic perspective: local and intra-regional trade in Aqaba Ware during the first and second centuries A.D.*, Oxford: Archaeopress.
- Dols, M. W. (1979) *The Black Death in the Middle East*, Princeton: Princeton University Press.
- Dravida Munnetra Kazhagam (DMK) Facebook community,  
<https://www.facebook.com/arivalayam/info>: accessed 10/07/2013.
- Duncan, J. and Derrett, M. (1962) 'The Theban Scholasticus and Malabar in c. 355-360' *Journal of African and Oriental Studies* 82: 21-31.
- Dutt, N. K. (1925) *The aryanisation of India*, Calcutta: published by the author.
- Eaton, R. M. (1990) *Islamic history as global history*, Washington, D.C.: American Historical Association.

- Eckhardt, H. (ed.) (2010) *Roman diasporas: archaeological approaches to mobility and diversity in the Roman Empire*, Portsmouth (RI): Journal of Roman Archaeology.
- Edwards, M. (2012) 'The beginnings of Christianization' in Lenski, N. E. (ed.) *The Cambridge companion to the age of Constantine*, revised edition, Cambridge: Cambridge University Press, 137-58.
- Elliot, W. (1886) *Coins of southern India*, London: Trübner.
- . (1858) 'Numismatic gleanings, being descriptions and figures of the most ancient coinage of southern India' *Madras Journal of Literature and Science* 19 & 20.
- . (1844) 'Discovery of Roman coins in the Coimbatore District' *Madras Journal of Literature and Science* 30:212-15.
- . (1837) 'Hindu inscriptions' *Journal of the Royal Asiatic Society* 7: 1-41.
- Empéreur, J.-Y. (ed.) (1998) *Commerce et artisanat dans l'Alexandrie hellénistique et romaine : actes du colloque d'Athènes organisé par le CNRS, le Laboratoire de céramologie de Lyon et l'École française d'Athènes, 11-12 décembre 1988*, Athens: École française d'Athènes.
- Evans, J. A. S. (2002) *The age of Justinian: the circumstances of imperial power*, London: Routledge.
- Express News Service (Thiruvananthapuram) (May 14 2009) 'Learn Greek, Latin in Thiruvananthapuram' *New Indian Express*  
<http://newindianexpress.com/cities/thiruvananthapuram/article118743.ece>:  
accessed 23/09/2012.
- Faith, R. (1997) *The English peasantry and the growth of lordship*, London: Leicester University Press.
- Fattovich, R., Bard, K. A., Petrassi, L. et al. (2000) *The Aksum archaeological area: a preliminary assessment*, Naples: Istituto Universitario Orientale.
- Faucheux, L. (1945) *Une vieille cisé indienne pres de Pondichéry*, Pondicherry: Virampatnam.
- Foss, C. (2008) *Arab-Byzantine coins, an introduction with a catalogue of the Dumbarton Oaks collection*, Washington, D.C.: Dumbarton Oaks Research Library and Collection.
- Francis Jr., P. (2013a) 'The beads' in Carswell, J., Deraniyagala, S. U. and Graham, A. J. (eds) *Mantai: city by the sea*, Aichwald: Linden Soft Verlag, 352-3.

- . (2013b) 'Western geographic knowledge of Sri Lanka and Mantai ca. 325 B.C. to 1170 A.D.' in Carswell, J., Deraniyagala, S. U. and Graham, A. J. (eds) *Mantai: city by the sea*, Aichwald: Linden Soft Verlag, 53-60.
- . (1991) 'Beadmaking at Arikamedu and beyond' *World Archaeology* 23.1: 28-43.
- Freeling, G. H. (1857) 'On the collection of coins in the Society's cabinet' *Journal of the Asiatic Society of Bengal* 26: 234-8.
- Freeman-Grenville, G. S. P. (1990) 'Review: *The Periplus Maris Erythraei: text with introduction, translation, and commentary* by Lionel Casson' *Bulletin of the School of Oriental and African Studies* 53.1: 126-7.
- Fussman, G. (1997) 'The *Periplus* and the political history of India' in De Romanis, F. and Tchernia, A. (eds) *Crossings: early Mediterranean contacts with India*, New Delhi: Manohar Publishers, 66-71.
- . (1991) 'Le Périples et l'histoire de l'Inde' *Journal Asiatique* 279: 31-8.
- Garg, S. and Garg, N. (forthcoming) *Indian coins in the Fitzwilliam Museum: the Mughals and their contemporaries*, Cambridge: Fitzwilliam Museum, 2 vols.
- Garnder, P. (1886) *The coins of the Greek and Scythic kings of Bactria and India in the British Museum*, London: the British Museum.
- Geraghty, R. M. (2007) 'The impact of globalization in the Roman Empire, 200 BC-AD 100' *The Journal of Economic History* 67: 1036-61.
- Gerini, G. E. (1909) *Researches on Ptolemy's Geography of eastern Africa (further India and Indo-Malay archipelago)*, London: Royal Asiatic Society, Royal Geographical Society.
- Geyer, M. and Bright, C. (1995) 'World history in a global age' *The American Historical Review* 100.4: 10-34-60.
- Ghosh, N. C. and Ismail, K. (1980) 'Two foreign gold coins from excavation at Kudavelli, District Mahabubnagar, Andhra Pradesh' *Journal of the Numismatic Society of India* 92: 11-17.
- Gibbon, E. (1776) *The history of the decline and fall of the Roman Empire*, volume 1, London: W. Strahan and T. Cadell.
- Gilliver, K., Goldsworthy, A. and Saylor, S. (2005) *Rome at war: Caesar and his legacy*, Oxford: Osprey Publishing Ltd.
- Glover, I. (2002) 'West Asian Sassanian-Islamic ceramics in the Indian Ocean, South and Southeast and East Asia' *Man and Environment* 27.1: 165-77.



- . (1996) 'The archaeological evidence for early trade between India and southeast Asia' in Reade, J. (ed.) *The Indian Ocean in Antiquity*, London: Kegan Paul, 365-400.
- . (1990a) 'Ban Don Ta Phet: the 1984-85 excavation' in Glover, I. and Glover, E. A. (eds) *South Asian Archaeology 1986*, Oxford: Archaeopress, 139-83.
- . (1990b) *Early trade between India and Southeast Asia – a link in the development of a world trading system*, Hull: Centre for South-East Asian Studies.
- . (1983) 'Excavations at Ban Don Ta Phet, Kanchanburi Province, Thailand, 1980-81' *South-East Asia Studies Newsletter* 10: 1-3.
- . (1980) 'Ban Don Ta Phet and its relevance to problems in the pre- and proto-history of Thailand' *Bulletin of the Indo-Pacific Prehistory Association* 2: 16-30.
- Glover, I., Charoenwongsa, P., Alvey, B. A. P. *et al.* (1984) 'The cemetery of Ban Don Ta Phet, Thailand: results from the 1980-81 excavation season' in Allchin, B. (ed.) *South Asian Archaeology 1981*, Cambridge: Cambridge University Press, 319-30.
- Glynn, S. and Booth, A. (1996) *Modern Britain: an economic and social history*, London: Routledge.
- Göbl, R. (1971) *Sasanian numismatics*, Braunschweig: Klinkhardy and Biermann.
- Gofas, D. (2001) 'The Byzantine law of interest' in Laiou, A. (ed.) *The economic history of Byzantium: from the seventh through the fifteenth century*, volume 3, Washington, D.C.: Dumbarton Oaks Research Library and Collection, 1095-104.
- Gogte, V. D. (2004) 'Discovery of an ancient port: Palaepatmai of the Periplus on the west coast of India' *Journal of Indian Ocean Archaeology* 1: 124-32.
- . (1999) 'Petra, the Periplus and ancient Indo-Arabian maritime trade' *Annual of Department of Antiquities of Jordan* 43: 299-304.
- Googlebooks <http://books.google.com/bkshp?hl=en&tab=mp>: accessed 18/09/2013.
- Gopal, B. R. and Tharantha, N. S. (eds) (1996) *Kadambas, their history and culture: seminar papers*, Mysore: Directorate of Archaeology and Museums.
- Gopal, R. (1995) 'A Byzantine gold coin at Lingsugur (Karnataka)' *Journal of the Numismatic Society of India* 57: 38-9.
- Gosden, C. and Marshall, Y. (1999) 'The cultural biography of objects' *World Archaeology* 31.2: 169-78.

- Graf, D. F. (1997) 'The Nabataean army and the *cohorts ulpiae petraeorum*' in *Rome and the Arabian frontier: from the Nabataeans to the Saracens*, Aldershot: Ashgate Variorum, 265-311.
- . (1994) 'Review: *The Periplus Maris Erythraei: text with introduction, translation, and commentary* by Lionel Casson' *Journal of Philology* 115.1: 143-47.
- Graham, A. J. (2013a) 'Clay and pottery objects' in Carswell, J., Deraniyagala, S. U. and Graham, A. J. (eds) *Mantai: city by the sea*, Aichwald: Linden Soft Verlag, 411-15.
- . (2013b) 'Excavations 1887-1976 and the condition of the site in 1980 – excavations 1980-1984' in Carswell, J., Deraniyagala, S. U. and Graham, A. J. (eds) *Mantai: city by the sea*, Aichwald: Linden Soft Verlag, 98-107.
- . (2013c) 'Pottery from the excavated sequence in trenches H and G' in Carswell, J., Deraniyagala, S. U. and Graham, A. J. (eds) *Mantai: city by the sea*, Aichwald: Linden Soft Verlag, 191-212.
- Greatrex, G. and Lieu, N. C. (eds) (2002) *The Roman eastern frontier and the Persian wars, part 2: A.D. 363-630, a narrative sourcebook*, London: Routledge.
- Grierson, P. (1999) *Byzantine coinage*, Washington, D.C.: Dumbarton Oaks Research Library and Collection.
- . (1992) 'Numismatics' in Powell, J. (ed.) *Medieval studies: an introduction*, 2<sup>nd</sup> edition, New York: Syracuse University Press, 114-61.
- Grierson, P. and Blackburn, M. (1986) *Medieval European coinage I: the early middle ages (5<sup>th</sup>-10<sup>th</sup> centuries)*, Cambridge: Cambridge University Press.
- Grig, L. and Kelly, G. (eds) (2012) *Two Romes: Rome and Constantinople in late antiquity*, Oxford: Oxford University Press.
- Groom, N. (1995) 'The Periplus, Pliny and Arabia' *Arabian Archaeology and Epigraphy* 6: 180-95.
- . (1981) *Frankincense and myrrh – a study of the Arabian incense trade*, London: Longman.
- Guillaume, O. and Liger, J.-C. (1983) *Fouilles d'Aï Khanoum. 2, Les propylées de la rue principale*, Paris: Diffusion de Boccard.
- Gupta, P. L. (1984) 'Early Byzantine solidi from Karnataka' *Numismatic Digest* 8: 37-43.
- . (1972) 'An interesting treasure-trove from Weepangandla (Mahboobnagar)' *Journal of the Numismatic Society of India* 34.1: 1-8.
- . (1969) *Coins*, New Delhi: National Book Trust.

- . (1965) *Roman coins from Andhra Pradesh*, Hyderabad: The Government of Andhra Pradesh.
- . (1963) *The Amaravati hoard of silver punch marked coins*, Hyderabad: Government of Andhra Pradesh.
- Gurukkal, R. (1993) 'Towards the voice of dissent: trajectory of ideological transformation in early south India' *Social Scientist* 21.1/2: 2-22.
- Gurukkal, R. and Whittaker, D. (2001) 'In search of Muziris' *Journal of Roman Archaeology* 14: 335-50.
- Hahn, W. (2010) 'The sequence and chronology of the late Aksumite coin types reconsidered' *Journal of the Oriental Numismatic Society* 205: 5-10.
- . (2007) 'Registrierung von Fundmünzen aus Äthiopien' *Mitteilungsblatt des Instituts für Numismatik und Geldgeschichte der Universität Wien* 28: 40-1.
- . (2006a) 'Auf den Spuren des spätantiken Münzverkehrs in Aksum' *Money Trend* 38.3: 192-5.
- . (2006b) 'Zur Interpretation eines axumitischen Münztyps: Kreuzschild und Kreuzdevise als Bekehrungsmanifest' *Mitteilungsblatt des Instituts für Numismatik und Geldgeschichte der Universität Wien* 31: 6-7.
- . (2005) 'Zur Geschichte der Materialerfassung in der aksumitischen Münzkunde' *Meroitica* 22: 60-66.
- . (2002a) 'Die Teilvergoldung auf axumitischen Münzen – metallurgische und ikonographische Aspekte eines münzgeschichtlichen Phänomens' *Money Trend* 34.3: 124-7.
- . (2002b) 'Überlegungen zum Gewichtssystem der Aksumitischen Goldmünzen' *Mitteilungsblatt des Instituts für Numismatik und Geldgeschichte der Universität Wien* 25: 5-8.
- . (2002c) 'Zur Geschichte der Münzstätte Addis Ababa, 3. Teil (die Produktion von medaillösen Stücken) und 4. Teil (aus österreichischen Archiven)' *Money Trend* 34.12: 118-21.
- . (2000) 'Von der Münze zum Schmuck und zurück: Montierung und Demontierung von Henkeln an spätromischen und axumitischen Beispielen' *Money Trend* 32.9: 56-8.
- . (1994-5) 'Symbols of pagan and Christian worship on Aksumite coins. Remarks on the history of religion in Ethiopia as documented by its coinage' *Nubica et Aethiopica* 4/5: 431-54.

- . (1988) 'Aksumite coins in southern Arabia and in Palestine' in Gromyko, A. (ed.) *Proceedings of the ninth international congress of Ethiopian studies*, Moscow: Nauka Publishers, 225.
- . (1984) 'Further reconsiderations on the chronology of the coinage of Aksum' *Jahrbuch für Numismatik und Geldgeschichte* 34: 127-34.
- . (1983) 'Die Münzprägung des Aksumitischen Reiches' *Litterae Numismaticae Vindobonenses* 2: 113-80.
- . (1980) 'A sixth-century hoard of Byzantine small change from Egypt, and its contribution to the classification of African minimi' *Numismatic Chronicle* 20: 64-70.
- Hahn, W. and Metcalf, W. F. (eds) (1988) *Studies in early Byzantine gold coinage*, Wetteren: Belgium Cultura.
- Haldon, J. (2005) *The Palgrave atlas of Byzantine history*, Basingstoke: Palgrave Macmillan.
- . (1990) *Byzantium in the seventh century*, Cambridge: Cambridge University Press.
- Handley, F. (2011) 'Matting, basketry and cordage' in Peacock, D. and Blue, L. (eds) *Myos Hormos – Quseir al-Qadim: Roman and Islamic ports on the Red Sea, volume 2: finds from the excavations 1999-2003*, Oxford, Archaeopress, 289-320.
- Harrauer, H. and Sijpesteijn, P. (1985) 'Ein neues Dokument zu Roms Indienhandel, P. Vindob. G 40822' *Anzeiger der Österreichischen Akademie der Wissenschaften* 122: 124-55.
- Hart (III), G. L. (2004) 'Rev. of Kāvya in South India: Old Tamil Caṅkam Poetry by Herman Tiekens' *Journal of African and Oriental Studies* 124: 180-4.
- Hebalkar, S. (2001) *Ancient Indian ports with special reference to Maharashtra*, New Delhi: Munshiram Manoharlal Publishers.
- Heitzman, J. (1987) 'Temple urbanism in medieval south India' *The Journal of Asian Studies* 46.4: 791-826.
- Hendy, M. F. (1985) *Studies in the Byzantine monetary economy*, Cambridge: Cambridge University Press.
- Henige, D. P. (1975) 'Some phantom dynasties of early and medieval India: epigraphic evidence and the abhorrence of a vacuum' *Bulletin of the School of Oriental and African Studies* 38.3: 525-49.

- Heldman, M. (1994) *The Marian icons of the painter Fré Seyon*, Wiesbaden: Harrassowitz Verlag.
- Henkel, M. and Vabø, A. (2006) 'Academic identities' in Kogan, M., Bauer, M. and Henkel, M. (eds) *Transforming higher education*, 2<sup>nd</sup> edition, Berlin: Springer, 127-60.
- Hense, A. M. (2007) 'Metal finds' in Sidebotham, S. E. and Wendrich, Z. (eds) *Berenike 1999/2000: report on the excavations at Berenike, including excavations in Wadi Kalalat and Siket, and the survey of the Mons Smaragdus region*, Los Angeles: Cotsen Institute of Archaeology, University of California, 211-19.
- Herteig, A., Liden, H.-E., Blindheim, C. (1975) *Archaeological contributions to the early history of urban communities in Norway*, Oslo: Universitetsforlaget.
- Hill, G. F. (1898) 'Roman aurei from Pudukota, south India' *The Numismatic Chronicle and Journal of the Numismatic Society* 18.1: 304-320.
- HINARI, Access to Research in Health Programme (2002-) World Health Organisation, <http://www.who.int/hinari/en/>, accessed 30/04/2014.
- Hingley, R. (2005) *Globalizing Roman culture: unity, diversity and empire*, London: Routledge.
- Hobbs, R. (1995) 'Roman coins from Merv, Turkmenistan' *Oxford Journal of Archaeology* 14.1: 97-102.
- Hollerich, M. J. (1982) 'The Alexandrian bishops and the grain trade: ecclesiastical commerce in Late Roman Egypt' *Journal of the Economic and Social History of the Orient* 25.2: 187-207.
- Hopkins, A. G. (ed.) (2002) *Globalization in world history*, London: Pimlico.
- Horton, M. (1990) 'The *Periplus* and east Africa' *Azania* 25: 95-9.
- Hourani, G. (1995) *Arab seafaring in the Indian Ocean in ancient and medieval times*, Princeton: Princeton University Press.
- Howard-Johnston, J. (2008) 'The destruction of the Late Antique world order' in Kennet, D. and Luft, P. (eds) *Current research in Sasanian archaeology, art and history: proceedings of a conference held at Durham University, November 3<sup>rd</sup> and 4<sup>th</sup>, 2001*, Oxford: Archaeopress, 79-86.
- Hudson, G. F. (1931) *Europe and China: a survey of their relations from the earliest times to 1800*, London: Edward Arnold and Co.

- Huxley, G. L. (1980) 'On the Greek martyrism of the Negrans' *Proceedings of the Royal Irish Academy, Section C: Archaeology, Celtic Studies, History, Linguistics, Literature* 80: 41-55.
- Indian Institute of Research in Numismatic Studies, <http://lakdiva.org/coins/iirns/>: accessed 15/01/2012.
- Indian Planning Commission (2008) *Kerala development report*, Delhi: Government of India.
- Indo-Roman trade and relations Facebook community, <https://www.facebook.com/pages/Indo-Roman-trade-and-relations/105078116216342> accessed 18/6/2013: accessed 18/6/2013.
- Initiative for the Science of the Human Past (2011), <http://projects.iq.harvard.edu/shp/home>, Harvard University: accessed 30/04/2014.
- Janni, P. (1984) *La mappa e il periplo: cartografia antica e spazio odologico*, Rome: Bretschneider.
- Jstor Journal Archive, <http://www.jstor.org/>; <http://books.google.co.uk/>: accessed 14/08/2013.
- Kailasapathy, K. (1979) 'The Tamil purist movement: a re-evaluation' *Social Scientist* 7.10: 23-51.
- Kandaswamy, S. P. (1984) 'The Kongu and the Roman coins' *Journal of the Numismatic Society of India* 46: 39-44.
- Karnataka Government Directory of Archaeology and Museum, <http://kannadasiri.kar.nic.in/archaeology/eng/activities.htm>: accessed 28/12/2011.
- Karttunen, K. (1997) *India and the Hellenistic world*, Helsinki: Finnish Oriental Society.
- Kasinathan, N. (1993) 'Roman coins from Alagankulam excavations' *Studies in South Indian Coins* 3:47-50.
- Kazhdan, A. (1992) 'The notion of Byzantine diplomacy' in Shepard, J. and Franklin, S. (eds) *Byzantine diplomacy*, Aldershot: Variorum, 3-21.
- Kelly, C. (ed.) (2013) *Theodosius II: rethinking the Roman Empire in late antiquity*, Cambridge: Cambridge University Press.
- Kennedy, J. (1912) 'The secret of Kanishka' *Journal of the Royal Asiatic Society of Great Britain and Ireland* 665-88.

- Kennet, D. (2004) *Sasanian and Islamic pottery from Ras al-Khaimah*, Oxford: Archaeopress.
- Kennet, D. with contribution by Krahl, R. (2004) *Sasanian and Islamic pottery from Ras al-Khaimah*, Oxford: Archaeopress.
- Kennet, D. and Luft, P. (eds) (2008) *Current research in Sasanian archaeology, art and history: proceedings of a conference held at Durham University, November 3<sup>rd</sup> and 4<sup>th</sup>, 2001*, Oxford: Archaeopress.
- Kerala Council for Historical Research, <http://www.keralahistory.ac.in/>: accessed 23/01/2012.
- Kerala State Department of Archaeology  
[http://archaeology.kerala.gov.in/index.php?option=com\\_content&view=article&id=12&Itemid=11](http://archaeology.kerala.gov.in/index.php?option=com_content&view=article&id=12&Itemid=11): accessed 15/12/2011.
- Kiribamune, S. (2013) 'The role of the port city of Mahatittha (Matota) in the trade networks of the Indian Ocean' in Carswell, J., Deraniyagala, S. U. and Graham, A. J. (eds) *Mantai: city by the sea*, Aichwald: Linden Soft Verlag, 40-52.
- Kocka, J. (2013) 'Global history: opportunities, dangers, recent trends' *Culture and History Digital Journal* 1.1: 1-6.
- Kominko, M. (2013) *The world of Kosmas: illustrated Byzantine codices of the Christian Topography*, Cambridge, Cambridge University Press.
- . (2008) 'New perspectives on paradise – the levels of reality in Byzantine and Latin medieval maps' in Talbert, R. J. A. and Unger, R. W. (eds) *Cartography in antiquity and the Middle ages: fresh perspectives, new methods*, Leiden: Brill, 139-53.
- Krishnamurthy, R. (2007) *Late Roman copper coins from south India: Karur, Madurai and Tirukkoilur*, Chennai: Garnet publishers.
- . (2006a) 'Roman gold coins from southern Tamil Nadu, India: some 5<sup>th</sup> cent. A.D. solidi and their imitations' in De Romanis and Sorda, S. (eds) *Dal Denarius al Dinar: l'oriente e la moneta Romana: atti dell'incontro di studio, Roma 16-18 settembre 2004*, Rome: Istituto Italiano di Numismatica, 173-9.
- . (2006b) 'Two coins of King Agrippa I of Judaea from Karur' *Studies in South Indian Coins* 16: 21-3.
- . (2005) 'Some Roman republican *denarii* from Karur in south India' in Alfaro, C., Marcos, C. and Otero, P. (eds) *XIII Congreso Internacional de Numismática (Madrid 2003). Actas – Proceedings – Actes*, volume 1, Madrid, Servicio de Publicaciones del Ministerio de Cultura, 625-8.

- . (2004) *The Pallava coins*, Chennai: Garnet publishers.
- . (1999) 'Aksumite coins of Ethiopia from Karur, Tamil Nadu' *Studies in South Indian Numismatics* 8: 58-64.
- . (1998) 'Imitation Roman gold coins from Tirukoilur hoard, Tamilnadu' in Jha, D. N. and Garg, S. (eds) *Ex moneta: essays on numismatics in honour of Dr David W. MacDowall*, New Delhi: Harman Publishing House, 145-50.
- . (1997) *Sangam Age Tamil coins*, Madras: Garnet Publications.
- . (1994) *Late Roman copper coins from south India: Karur and Madurai*, Madras: Garnet Publications.
- . (1993) 'Two new Republican denarii from Tamil Nadu' *Numismatic Studies* 3: 625-8.
- Krishna Sastry, V. V. (1992) *Roman gold coins (recent discoveries in Andhra Pradesh)*, Hyderabad: Government of Andhra Pradesh.
- Krishna Sastry, V. V., Subrahmanyam, B. and Rama Krishna Rao, N. (1992) *Thotlakonda (a Buddhist site in Andhra Pradesh)*, Hyderabad: Government of Andhra Pradesh.
- Kulkarni, P. P. (1984) 'Early Roman coins in India' *Journal of the Numismatic Society of India* 46: 37-8.
- Lal, B. B. (1993) *Sringavarapura excavations*, Delhi: Archaeological Survey of India.
- Lee, A. D. (2013) *From Rome to Byzantium A.D. 363 to 565: the transformation of ancient Rome*, Edinburgh: Edinburgh University Press.
- Leriche, P. (1986) *Fouilles d'Ai Khanoum. 5, Les remparts et les monuments associés*, Paris: Diffusion de Boccard.
- Leslie, D. D. and Gardiner, K. H. J. (1996) *The Roman empire in Chinese sources*, Rome: Bardi Editori.
- Li, F. and Prager Banner, D. (eds) (2011) *Writing and literacy in early China: studies from the Columbia early China seminar*, Seattle: University of Washington Press.
- Lieu, J., North, J. A. and Rajak, T. (eds) (1992) *The Jews among pagans and Christians in the Roman Empire*, London: Routledge.
- Lieu, S. N. C. (1985) *Manichaeism in the later Roman Empire and medieval China: a historical survey*, Manchester: Manchester University Press.
- Little, H. (1883) '[A discovery of denarii near Karur]' *Madras Christian College Magazine*.



- Littmann, E. (ed.) (1913) *Deutsche Aksum-Expedition*, Berlin: G. Reimer.
- . (1906) *Vorbericht der deutschen Aksumexpedition*, Berlin: Königl. Akademie der Wissenschaften.
- Liu, X. (2001) 'The Silk Road: overland trade and cultural interactions in Eurasia' in Adas, M. (ed.) *Agricultural and pastoral societies in ancient and classical history*, Philadelphia: Temple University Press, 151-79.
- Lockwood, M., Siromoney, G. and Dayanandan, P. (eds) (1974) *Mahabalipuram studies*, Madras: the Christian Literature Society.
- Lokubandara, W. J. M. (2003) 'Sri Lanka's role in the maritime silk route' in Bandaranayake, S. (ed.) *Sri Lanka and the Silk Road of the sea*, Colombo: Sri Lanka National Commission for UNESCO and the Cultural Fund, 13-15.
- Longhurst, A. H. (1938) *Buddhist antiquities of Nagarjunakonda*, Delhi: Archaeological Survey of India.
- Lopez, R. (1951) 'The dollar of the Middle Ages' *Byzantium and the world around it: economic and institutional relations*, London: Variorum Reprints, 209-34.
- Lopez, R., Raymond, I. and Remie Constable, O. (2001) *Medieval trade in the Mediterranean world: illustrative documents*, New York: Columbia University Press.
- Louth, A. (2005) 'The Eastern Empire in the sixth century' in Fouracre, P. (ed.) *The new Cambridge medieval history, volxxxxxx*, Cambridge: Cambridge University Press, 93-117.
- Lozovsky, N. (2008) 'Maps and panegyrics: Roman geo-ethnographical rhetoric in late antiquity and the Middle Ages' in Talbert, R. J. A. and Unger, R. W. (eds) *Cartography in antiquity and the Middle Ages: fresh perspectives, new methods*, Leiden: Brill, 169-88.
- Lucas, G. (2012) *Understanding the archaeological record*, Cambridge: Cambridge University Press.
- Maas, M. (2007) 'Strabo and Procopius: classical geography for a Christian empire' in Amirav, H. and Haar Romeny, B. t. (eds) *From Rome to Constantinople: studies in honour of Averil Cameron*, Leuven: Peeters, 67-84.
- McCormick, M. (2001) *Origins of the European economy: communications and commerce A.D. 300-900*, Cambridge: Cambridge University Press.
- MacDowall, D. W. (2006) 'The use of bimetallism in the Roman and Kushan coinage trade' in De Romanis and Sorda, S. (eds) *Dal Denarius al Dinar: l'oriente e la moneta Romana: atti dell'incontro di studio, Roma 16-18 settembre 2004*, Rome: Istituto Italiano di Numismatica, 43-53.

- MacDowall, D. W. and Jha, A. K. (eds) (1992) 'Three India copies of the Pontif Maxim denarius of Tiberius' *Numismatic Digest* 16: 52-7.
- MacDowall, D. W., Sharma, S. and Garg, S. (eds) (1992) *Indian numismatics, history, art and culture: essays in honour of Parmeshwari Lal Gupta*, volumes 1 and 2, Delhi: Agamkala Prakashan.
- Mahadevan, I. (2002) 'Aryan or Dravidian or neither? A study of recent attempts to decipher the Indus script (1995-2000)' *Electronic Journal of Vedic Studies* 8.1: 1-19.
- . (1996a) 'Pottery inscriptions in Brahmi and Tamil-Brahmi' in Begley, V., Francis Jr., P. and Mahadevan, I. (eds) *The ancient port of Arikamedu: new investigations and researches 1989-1992*, Pondicherry: Centre d'histoire et d'archeologie, Ecole française d'Extreme-Orient, 287-315.
- . (1996b) 'Tamil-Brahmi graffito' in Sidebotham, S. E. and Wendrich, W. Z. (eds) *Berenike 1995: Preliminary report of the 1995 excavations at Bereike (Egyptian Red Sea coast) and the survey of the Eastern Desert*, Leiden: Research School for African, Asian and Amerindian Studies, 206-8.
- Mahalingam, T. V. (1976) *Readings in south Indian history*, Delhi: B. R. Publishing Corporation.
- . (1967) *Early south Indian palaeography*, Chennai: University of Madras.
- Maloney, C. (1970) 'The beginnings of civilization in south' *The Journal of Asian Studies* 29.3: 603-16.
- Mani, B. R. (1987) *The Kushan civilization: studies in urban developments and material culture*, Delhi: B. R. Publishing Corporation.
- Mann, J. C. (1974) 'The northern frontier after A.D. 369' *Glasgow Archaeological Journal* 3: 34-42.
- Marshall, J. H. (1960) *A guide to Taxila*, Cambridge: Cambridge University Press.
- . (1951) *Taxila: an illustrated account of archaeological excavations carried out at Taxila under the orders of the Government of India between the years 1913 and 1934*, Cambridge: Cambridge University Press.
- Mathew, G. (1975) 'The dating and significance of the *Periplus of the Erythraean Sea*' in Chittick, N. and Rotberg, R. I. (eds) *East Africa and the Orient*, New York: Africana Publishing Company, 147-63.
- Mayerson, P. (1995) 'A note on Iotabê and several other islands in the Red Sea' *Bulletin of the American Schools of Oriental Research* 298: 33-5.

- . (1993) 'A confusion of Indias: Asian India and African India in the Byzantine sources' *Journal of the American Oriental Society* 113.2: 169-74.
- . (1992) 'The island of Iotabe in the Byzantine sources: a reprise' *Bulletin of the American Schools of Oriental Research* 287: 1-4.
- McCormick, M. (2001) *Origins of the European economy: communications and commerce A.D. 300-900*, Cambridge: Cambridge University Press.
- McLaughlin, R. (2010) *Rome and the distant east: trade routes to the ancient lands of Arabia, India and China*, London and New York: Continuum.
- Meile, P. (1940-41) 'Les Yavanas dans l'Inde tamoule' *Journal Asiatique* 232: 85-123.
- Metcalf, B. D. and Metcalf, T. R. (2006) *A concise history of modern India*, Cambridge: Cambridge University Press.
- Metlich, M. A. (2006) 'Aksumite gold coins and their relation to the Roman-Indian trade' in De Romanis and Sorda, S. (eds) *Dal Denarius al Dinar: l'oriente e la moneta Romana: atti dell'incontro di studio, Roma 16-18 settembre 2004*, Rome: Istituto Italiano di Numismatica, 99-103.
- Michels, J. W. (2005) *Changing settlement patterns in the Aksum-Yeha region of Ethiopia c. 700 B.C. – A.D. 850*, Oxford: Archaeopress.
- Miller, K. (1916) *Die Peutingersche Tafel*, Stuttgart: F. A. Brocjhaus.
- Miller, J. I. (1969) *The spice trade of the Roman Empire, 29 B.C. to A.D. 641*, Oxford: the Clarendon Press.
- Mines, M. (1984) *The warrior merchants: textiles, trade and territory in south India*, Cambridge: Cambridge University Press.
- Mitchiner, M. (1975a) *Indo-Greek and Indo-Scythian Coinage: the early Indo-Greeks and their antecedants*, volume 1, London: Hawkins Publications.
- . (1975b) *Indo-Greek and Indo-Scythian Coinage: the apogee of the Indo-Greeks*, volume 2, London: Hawkins Publications.
- . (1975c) *Indo-Greek and Indo-Scythian Coinage: the decline of the Indo-Greeks*, volume 3, London: Hawkins Publications.
- . (1975d) *Indo-Greek and Indo-Scythian Coinage: contemporaries of the Indo-Greeks*, volume 4, London: Hawkins Publications.
- . (1975e) *Indo-Greek and Indo-Scythian Coinage: establishment of the Scythians in Afghanistan and Pakistan*, volume 5, London: Hawkins Publications.

- . (1975f) *Indo-Greek and Indo-Scythian Coinage: the dynasty of Azes*, volume 6. London: Hawkins Publications.
- . (1975g) *Indo-Greek and Indo-Scythian Coinage: the decline of the Indo-Scythians*, volume 7, London: Hawkins Publications.
- . (1975h) *Indo-Greek and Indo-Scythian Coinage: the rise of the Indo-Parthians*, volume 8, London: Hawkins Publications.
- . (1975i) *Indo-Greek and Indo-Scythian Coinage: the later Indo-Parthians*, volume 9, London: Hawkins Publications.
- Mitrea, B. and Preda, C. (1964) 'Quelques problèmes ayant trait aux nécropoles de type Sîntana-Tcherniakov découvertes en Valachie' *Dacia* 8: 211-37.
- Mohanty, R. (2013) 'Indian imported pottery' in Carswell, J., Deraniyagala, S. U. and Graham, A. J. (eds) *Mantai: city by the sea*, Aichwald: Linden Soft Verlag, 213-27.
- Monks, G. R. (1953) 'The church of Alexandria and the city's economic life in the sixth century' *Speculum* 28.2: 349-62.
- Mordini, A. (1960) 'Gli aurei Kushana del convento di Dabro Dammo. Un'idizio sui rapporti commerciali fra l'India e l'Etiopia nei primi secoli dell'era volgare' *Atti del Convegno Internazionale di Studi Etiopici* 249-54.
- Morrisson, C. (2001) 'Byzantine money: its production and circulation' in Laiou, A. E. (ed.) *The economic history of Byzantium: from the seventh through the fifteenth century*, volume 3, Washington, D.C.: Dumbarton Oaks Research Library and Collection, 909-66.
- Mouriki, D. (1970) 'The Octateuch miniatures of the Byzantine manuscripts of Cosmas Indicopleustes' Unpublished PhD dissertation, University of Princeton: Department of Art History.
- Mukherjee, B. N. (2004) *Kushāna studies: new perspectives*, Kolkata: Firma KLM.
- Mukund, K. (1999) *The trading world of the Tamil merchant: evolution of merchant capitalism in the Coromandel*, London: Sangam Books Ltd.
- Munro-Hay, S. (1999) *Catalogue of the Aksumite coins in the British Museum*, London: British Museum Press.
- . (1996) 'Aksumite overseas interest' in Reade, J. (ed.) *The Indian Ocean in Antiquity*, London: Kegan Paul, 403-16.
- . (1991) *Aksum: an African civilization of late Antiquity*, Edinburgh: Edinburgh University Press.

- . (ed.) (1989a) *Excavations at Aksum*, London: British Institute in Eastern Africa.
- . (1989b) 'The al-Madhariba hoard of gold Aksumite and Late Roman coins' *Numismatic Chronicle* 149: 83-100.
- . (1989c) 'The British Museum excavations at Adulis, 1868' *Antiquaries Journal* 69.1: 43-52.
- . (1984a) 'An African monetarised economy in ancient times' *Second International Conference on Indian Ocean Studies, Perth, Western Australia, 5-12 December 1984*, volume E, Perth: International Conference on Indian Ocean Studies, no pagination, references given from 1.
- . (1984b) *The coinage of Aksum*, London: Manohar and R. C. Senior Ltd.
- Munro-Hay, S. and Juel-Jensen, B. E. (1995) *Aksumite coinage*, London: Spink and Son Ltd.
- Murthy, K. K. (1977) *Nagarjunakonda: a cultural study*, New Delhi: Concept Publishing.
- Muthesius, A. (2003) 'Silk in the medieval world' in Jenkins, D. T. (ed.) *The Cambridge history of western textiles, vol. 1*, Cambridge: Cambridge University Press, 325-54.
- Muthucumarana, R. (2011) 'Ancient port city of Godawaya and the recent discovery of the unknown wooden wreck with Black and Red Ware' *Maritime Archaeology Unit Blog*, <http://www.mausrilanka.lk/sub%20pages/Godawaya.html>, accessed 12/04/2014.
- Nagarajan, S. (June 2 2010) 'Tracking the monsoon' *The Hindu* <http://www.thehindu.com/life-and-style/metroplus/article444389.ece>: accessed 22/02/2011.
- Nagaraja Rao, M. S. (1987) 'Early Byzantine solidi from Karnataka' in Nagaraja Rao, M. S. (ed.) *Kusumanjali: new interpretation of Indian art and culture, Sri C. Sivaramamurti commemoration volume*, New Delhi: Agamkala Prakashan, 441-45.
- . (1980) 'Roman and Byzantine gold coins found in Dharwar District' *The Journal of Indian Museums* 36: 111-12.
- Nagaswamy, R. (2007) 'Kongu history' *Tamil Arts Academy Journal* 8: no pagination, <http://tamilartsacademy.com/journals/volume8/articles/article1.xml>: accessed 21/07/2011.
- . (ed.) (2006) *Sangam numismatics and cultural history – essays in honour of Dr R. Krishnamurthy*, Chennai: New Era Publications.
- . (1995) *Roman Karur: a peep into Tamil's past*, Madras: Brahad Prakashan.

- . (1991) 'Alagankulam: an Indo-Roman trading port' in Margabandhu, C. (ed.) *Indian archaeological heritage*, vol. 1, New Delhi: Agamkala Prakashan, 247-54.
- Nappo, D. (2010) 'On the location of Leuke Kome' *Journal of Roman Archaeology* 23.1: 335-48.
- . (2009) 'Roman policy in the Red Sea between Anastasius and Justinian' in Blue, L., Cooper, J., Thomas, R. *et al.* (eds) *Connected hinterlands: proceedings of Red Sea Project IV, held at the University of Southampton (September 2008)*, Oxford: Archaeopress, 71-7.
- Narain, A. K. (1980) *The Indo-Greeks*, Delhi: Oxford University Press.
- . (1965) 'Alexander in India' *Greece and Rome* 12.2: 155-65.
- Narasimha Murthy, A. V. (1984) 'A Roman coin mould from Banavasi' *Journal of the Numismatic Society of India* 46: 45-6.
- Narasimha Murthy, A. V. and Raja Reddy, D. (2014) *Gold coins in the Srivari Hundi of Lord Sri Venkateswara*, Tirumala Tirupati Devasthanam: Sri Venkateswara Museum.
- Narayanan, M. G. S. (1988) 'The role of peasants in the early history of Tamilakam in south India' *Social Scientist* 16.9: 17-34.
- Nawartmal, H. and Nawartmal, L. (1998) 'Spätantikes Handelsgold in Südindien' *Money Trend* 30.11: 52-7.
- Nilakanta Sastri, K. A. (1976) *A history of south India from prehistoric times to the fall of Vijayanagar*, 4<sup>th</sup> edition, Delhi: Oxford University Press.
- . (1958) *A history of south India from prehistoric times to the fall of Vijayanagar*, 2<sup>nd</sup> edition, Oxford: Oxford University Press.
- Noreña, C. F. (2001) 'The communication of the emperor's virtues' *The Journal of Roman Studies* 91, 146-68.
- Oddy, W. A. and Munro-Hay, S. (1988) 'The gold coinage of Aksum: new specific gravity and XRF measurements and their chronological significance' *Metallurgy and Numismatics* 2: 1-16.
- . (1980) 'The specific gravity analysis of the gold coins of Aksum' *Metallurgy and Numismatics* 1: 73-82, plts 2-4.
- Palmer, J. A. B. (1947) 'Periplus Maris Erythraei: the Indian evidence as to the date' *Classical Quarterly* 41.3/4: 136-40.

- Pankhurst, R. (1999) 'Ethiopia, the Aksum obelisk, and the return of Africa's cultural heritage' *African Affairs* 98.391: 229-39.
- Parabrahma Sastry, P. V. (1975) *Epigraphica Andhrica*, volume 4, Hyderabad: Government of Andhra Pradesh.
- Paramasivanandam, A. M. (1960) *Tamilnad through the ages*, Madras: Tamil Kalai Illam.
- Paribeni, R. (1907) 'Ricerca nel luogo dell'antica Adulis (Colonia Eritrea) *Monumenti Antichi* 18: 445-51.
- Parker, G. (2011) *The making of Roman India*, Cambridge: Cambridge University Press.
- . (2002) 'Ex Oriente Luxuria: Indian commodities and Roman experience' *Journal of the Economic and Social History of the Orient* 45.1: 40-95.
- . (2001) 'Porous connections: the Mediterranean and the Red Sea' *Thesis Eleven* 67.1: 59-79.
- Parker, S. T. (2009) 'The Roman port of Aila: economic connections with the Red Sea littoral' in Blue, L., Cooper, J., Thomas, R. *et al.* (eds) *Connected hinterlands: proceedings of Red Sea Project IV, held at the University of Southampton (September 2008)*, Oxford: Archaeopress, 79-84.
- . (2000) 'The Roman 'Aqaba Project: the 1997 and 1998 campaigns' *Annual of the Department of Antiquities of Jordan* 44: 373-94.
- . (1999) 'Brief notice on a possible early 4<sup>th</sup>-c. church at Aqaba, Jordan' *Journal of Roman Archaeology* 12: 375-6.
- . (1998a) 'An early church, perhaps the oldest in the world, found at Aqaba' *Near Eastern Archaeology* 61.4: 254.
- . (1998b) 'The Roman 'Aqaba Project: the 1996 campaign' *Annual of the Department of Antiquities of Jordan* 42: 375-94.
- . (1997) 'Preliminary report on the 1994 season of the Roman 'Aqaba Project' *Bulletin of the American Schools of Oriental Research* 305: 19-44.
- . (1996) 'The Roman 'Aqaba Project: the 1994 campaign' *Annual of the Department of Antiquities of Jordan* 40: 231-57.
- Pattanam Excavation Team (2011) *Summary of excavations 11/02/2011*, Pattanam: Kerala Council for Historical Research.
- Pattabiramin, P. Z. (1946) *Les fouilles d'Arikamédou (Podouké)*, Paris/Pondicherry: Bibliothèque Coloniale/Presses Universitaires de France.

- Peacock, D. (2011) 'Ceramic lamps' in Peacock, D. and Blue, L. (eds) *Myos Hormos – Quseir al-Qadim: Roman and Islamic ports on the Red Sea, volume 2: finds from the excavations 1999-2003*, Oxford, Archaeopress, 47-56.
- . (1993) 'The site of Myos Hormos: a view from space' *Journal of Roman Archaeology* 6: 226-32.
- Peacock, D. and Blue, L. (eds) (2011) *Myos Hormos – Quseir al-Qadim: Roman and Islamic ports on the Red Sea, volume 2: finds from the excavations 1999-2003*, Oxford, Archaeopress.
- . (eds) (2007) *The ancient Red Sea port of Adulis, Eritrea*, Oxford: Oxbow Books.
- . (eds) (2006) *Myos Hormos – Quseir al-Qadim, Roman and Islamic ports on the Red Sea, volume 1: the survey and report on the excavations*, Oxford, Oxbow Books.
- . (eds) (2003) *Myos Hormos – Quseir al-Qadim: a Roman and Islamic port site. Interim report 2001*, Southampton: unpublished.
- Peacock, D. and Williams, D. F. (eds) (2006) *Food for the gods: new light on the ancient incense trade*, Oxford: Oxbow Books.
- Peacock, M. (2006) 'The origins of money in ancient Greece: the political economy of coinage and exchange' *Cambridge Journal of Economics* 30, 637-50.
- Pereira, I. (September 20 2010) 'Down Rosh Hashanahs in Cochin' *The Hindu* <http://www.thehindu.com/news/cities/Kochi/article699115.ece>: accessed 22/02/2010.
- Phillips, J. (1997) 'Punt and Aksum: Egypt and the Horn of Africa' *The Journal of African History* 38.3: 423-57.
- . (2011) 'Leather' in Peacock, D. and Blue, L. (eds) *Myos Hormos – Quseir al-Qadim: Roman and Islamic ports on the Red Sea, volume 2: finds from the excavations 1999-2003*, Oxford, Archaeopress, 135-54.
- Phillipson, D. W. (2009) 'Aksum, the entrepot, and highland Ethiopia, 3<sup>rd</sup>-12<sup>th</sup> centuries' in Mango, M. (ed.) *Byzantine trade, fourth to twelfth centuries*, Farnham: Ashgate, 353-68.
- . (2005) *African archaeology*, Cambridge: Cambridge University Press.
- . (2000) *Archaeology at Aksum, Ethiopia, 1993-7*, London: British Institute in Eastern Africa.
- . (1998) *Ancient Ethiopia, Aksum: its antecedents and successors*, London: British Museum Press.



- . (1995) 'Excavations at Aksum, Ethiopia, 1993-4' *Antiquaries Journal* 75: 1-41.
- . (1994) 'The significance and symbolism of Aksumite stelae' *Cambridge Archaeological Journal* 4: 189-210.
- Phillipson, L. (2006) 'Ancient gold working at Aksum' *Azania* 41.1: 27-40.
- Piacentini, V. F. (1992) *Merchants, merchandise, and military power in the Persian Gulf: (Suriyan/Shahriyaj-Siraf)*, Rome: Academia Nazionale dei Lincei.
- Pillai, K. N. S. (1932) *The chronology of the early Tamils: based on the synchronistic tables of their kings, chieftains and poets appearing in the Sangam literature*, Madras: University of Madras.
- Pitts, L. F. (1989) 'Relations between Rome and the German "kings" on the middle Danube in the first to fourth centuries A.D.' *Journal of Roman Studies* 79: 45-58.
- Possehl, G. (1996) *Indus age: the writing system*, Philadelphia: University of Pennsylvania Press.
- . (1993) *The Indus civilization: a contemporary perspective*, New Delhi and Oxford: American Institute of Indian Studies and IBH Press.
- Potts, D. T. (1991a) 'Nabataean finds from Thaj and Qatif' *Arabian Archaeology and Epigraphy* 2.2: 138-44.
- . (1991b) *The pre-Islamic coinage of eastern Arabia*, Copenhagen: Carsten Niebuhr Institute Publications.
- Power, T. (2013) *The Red Sea from Byzantium to the Caliphate A.D. 500-1000*, Cairo and New York: The American University in Cairo Press.
- Prakash, O. (2004a) *Bullion for goods: European and Indian merchants in the Indian Ocean trade, 1500-1800*, New Delhi: Manohar Publishers.
- Prakash, O. (2004b) 'The Indian maritime merchant, 1500-1800' *Journal of the Economic and Social History of the Orient* 47.3: 435-57.
- Prasad, N. R. V. (1994) *Bavikonda: a Buddhist site in north coastal Andhra Pradesh*, Hyderabad: Department of Archaeology, Government of Andhra Pradesh.
- Price, S. R. F. (1984) *Rituals and power: the Roman imperial cult in Asia Minor*, Cambridge: Cambridge University Press.
- Prinsep, J. (1837a) 'Account of an inscription found by Mr H. S. Boulderson, in the neighbourhood of Bareilly' *Journal of the Asiatic Society of Bengal* 6.2: 772-86.

- . (1837b) 'Further elucidation of the lat or Silasthambha inscriptions from various sources' *Proceedings of the Asiatic Society of London* 790-97.
- . (1837c) 'Interpretation of the most ancient of inscriptions on the pillar called lat of Feroz Shah, near Delhi, and of the Allahabad, Radhia and Mattiah pillar, or lat inscriptions which agree therewith' *Journal of the Asiatic Society of Bengal* 6: 566-609.
- . (1837d) 'Note on the facsimiles of the various inscriptions on the ancient column at Allahabad, retaken by Captain Edward Smith, Engineers' *Proceedings of the Asiatic Society of Bengal* 6: 963-80.
- . (1837e) 'Specimens of Hindu coins descended from the Parthian type, and of the ancient coins of Ceylon' *Journal of the Asiatic Society of Bengal* 6.1: 288-302.
- . (1834a) 'Note on the coins discovered by M. Court' *Journal of the Asiatic Society of Bengal* 3: 562-7.
- . (1834b) 'On the coins discovered by M. le Chevalier Ventura' *Journal of the Asiatic Society of Bengal* 3: 313-20.
- . (1832) 'On the ancient Roman coins in the cabinet of the Asiatic Society' *Journal of the Asiatic Society of Bengal* 1: 392-408.
- Purcell, N. (1986) 'The arts of government' in Boardman, J., Griffin, J. and Murray, O. (eds) *The Oxford history of the classical world*, Oxford: Oxford University Press, 560-91.
- Puskás, I. (1987) 'Trade contacts between India and the Roman Empire' in Pollet, G. (ed.) *India and the ancient world: history, trade and culture before A.D. 650*, Leuven: Department Oriëntalisteik, 141-56.
- Radhakrishnan, P. V. (1999) *Roman gold and silver coins from India: a collector's guide*, Nasik: Indian Institute of Research in Numismatic Studies.
- . (1996a) 'A punch marked die from Karur' *Studies in South Indian Coins* 4: 51-6.
- . (1996b) 'Roman and Byzantine copper coins' in Maheshwari, K. K. and Rath, B. (eds) *Numismatic panorama: essays in the memory of late Shri S. M. Shukula*, New Delhi: Harnam Publishing House, 115-28.
- Raja Reddy, D., Acharyulu, G., Kamakshaiah, M. (2007) 'Statistical analysis of Amaravati hoard of imperial punch marked coins' *Studies in South Indian Coins* 17: 73-80.
- Raman, K. V. (1991) 'Further evidence of Roman trade from coastal sites in Tamil Nadu' in Begley, V. and De Puma, R. D. (eds) *Rome and India: the ancient sea trade*, Madison: University of Wisconsin Press, 125-33.

- Ramaswamy, S. (2004) *Fabulous geographies, catastrophic histories. The lost land of Lemuria*, Berkeley: University of California Press.
- Raschke, M. G. (1978) 'New studies in Roman commerce with the East' in Temporini, H. (ed.) *Aufstieg und Niedergang der Römischen Welt: Teil 2*, vol. 9.2, Berlin: Walter de Gruyter, 604-1361.
- Rawlinson, H. G. (1916) *Intercourse between India and the western world: from the earliest times to the fall of Rome*, Cambridge: Cambridge University Press.
- Ray, H. P. (1996a) 'Early coastal trade in the Bay of Bengal' in Reade, J. (ed.) *The Indian Ocean in Antiquity*, London: Kegan Paul, 351-64.
- . (1996b) 'Seafaring and maritime contacts: an agenda for historical analysis' *Journal of the Economic and Social History of the Orient* 39.4: 422-31.
- . (1989) 'Early maritime contacts between south and southeast Asia' *Journal of Southeast Asian Studies* 20.1: 42-54.
- . (1988) 'The Yavana presence in ancient India' *Journal of the Economic and Social History of the Orient* 31.3: 311-25.
- . (1986) *Monastery and guild: commerce under the Sātavāhanas*, Delhi: Oxford University Press.
- . (1987) *Ancient settlement patterns of eastern India*, Calcutta: Pearl Publishers.
- Rea, J. (1996) *The Oxyrhynchus papyri*, volume 63, London: Egyptian Exploration Fund for the British Academy.
- . (1975) *The Oxyrhynchus papyri*, volume 43, London: Egyptian Exploration Society for the British Academy.
- . (1972) *The Oxyrhynchus papyri*, volume 40, London: Egyptian Exploration Society for the British Academy.
- Reade, J. (ed.) (1996) *The Indian Ocean in antiquity*, London: Kegan Paul.
- Rees, R. (2004) *Diocletian and the tetrarchy*, Edinburgh: Edinburgh University Press.
- Robin, C. J. (2012) 'Arabia and Ethiopia' in Johnson, S. F. (ed.) *The Oxford handbook of Late Antiquity*, Oxford: Oxford University Press, 247-332.
- . (1997) 'The date of the Periplus of the Erythraean Sea in the light of South Arabian evidence' in De Romanis, F. and Tchernia, A. (eds) *Crossings: early Mediterranean contacts with India*, New Delhi: Manohar Publishers, 41-65.

- Roer, E. (1843) 'A catalogue of the coins of Roman emperors in the cabinet of the Asiatic Society' *Journal of the Asiatic Society of Bengal* 12.1: 136-52.
- Rutten, K. (2007) 'The Roman fine wares of ed-Dur (Umm al-Qaiwain, UAE) and their distribution in the Persian Gulf and Indian Ocean', *Arabian Archaeology and Epigraphy* 18, 8-24.
- Said, E. (1978) *Orientalism*, Harmondsworth, Penguin.
- Salles, J.-F. (2002) 'Adaptation culturelle des céramiques hellénistiques? Importation et imitations de produits occidentaux en Inde' in Blondeé, F., Ballet, P. and Salles, J.-F. (eds) *Céramiques hellénistiques et romaines. Productions et diffusion en Méditerranée orientale (Chypre, Égypte et côte syro-palestinienne)*, Lyon: Travaux de la Maison de l'Orient Méditerranéen, 189-212.
- . (1996) 'Achaemenid and Hellenistic trade in the Indian Ocean' in Reade, J. (ed.) *The Indian Ocean in Antiquity*, London: Kegan Paul, 251-67.
- . (1995) 'The *Periplus of the Erythraean Sea* and the Arab-Persian Gulf' in Boussac, M. F. and Salles, J.-F. (eds) *Athens, Aden and Arikamedu: essays on the interrelations between India and the eastern Mediterranean*, New Delhi: Manohar Publishers, 115-46.
- . (1987) 'The Arabian-Persian Gulf under the Seleucids' in Kuhrt, A. and Sherwin-White, S. (eds) *Hellenism in the east: the interaction of Greek and non-Greek civilisations from Syria to Central Asia after Alexander*, London: Duckworth, 79-109.
- . and Sedov, A. V. (2007) *Le port antique du Hadramawt entre la Méditerranée, l'Afrique et l'Inde*, Brepols: Turnhout.
- Saloman, R. (1991) 'Epigraphic remains of Indian traders in Egypt' *Journal of the American Oriental Society* 111.4: 731-6.
- Salway, B. (2005) 'The nature and genesis of the Peutinger Map' *Imago mundi: the international journal for the history of cartography* 57.2: 119-35.
- Sankalia, H. D. (1955) *Report on the excavations at Nasik and Jorwe, 1950-1951*, Poona: Deccan College Postgraduate and Research Institute.
- Sankalia, H. D., Subbarao, B. and Deo, S. B. (1958) *The excavations at Maheshwar and Navdatoli, 1952-1953*, Pune and Baroda: Deccan College and Maharaja Sayajirao University Press.
- Sarma, A. (1978) 'The paleoecology of coastal Tamilnadu, south India: chronology of raised beaches' *Proceedings of the American Philosophical Society* 122.6: 411-26.

- Sarma, I. K. (2000) *Numismatic researches: critical studies from excavated context*, Delhi: Book Indian Publishing Co.
- Sarma, K. (1973) 'A coin mould-piece from Nagarjunakonda excavations: new light on the silver coinage of the Satavahanas' *Journal of the Economic and Social History of the Orient* 16.1: 89-106.
- Sarris, P. (2006) *Economy and society in the age of Justinian*, Cambridge: Cambridge University Press.
- Sastry, T., Bai, M. K. and Rao, J. V. (1984) *Veerapuram: a type site for cultural study in the Krishna Valley*, Hyderabad: Government of Andhra Pradesh.
- Sathyamurthy, T. (1992) *A catalogue of Roman gold coins*, Thiruvananthapuram: Kerala State Department of Archaeology.
- Satyamurthy, T. (1993) 'A Roman copper coins in the collection of Art Museum, Thiruvananthapuram' *Studies in South Indian Coins* 3: 43-6.
- Savage-Smith, E. (2009) 'Maps and trade' in Mango, M. (ed.) *Byzantine trade, 4<sup>th</sup>-12<sup>th</sup> centuries*, Farnham: Ashgate, 15-29.
- Schatzman, I. (1975) *Senatorial wealth and Roman politics*, Buzelles: Latomus.
- Schindel, N. (2004) *Sylloge nummorum Sasanidarum Paris – Berlin – Wien, Band III: Shapur II – Kawad II. Regierung*, Vienna: Austrian Academy of Sciences Press.
- . (2006) 'Sasanian gold coinage: an overview' in De Romanis and Sorda, S. (eds) *Dal Denarius al Dinar: l'orient e la moneta Romana: atti dell'incontro di studio, Roma 16-18 settembre 2004*, Rome: Istituto Italiano di Numismatica, 105-29.
- . (2012a) *Sylloge nummorum Sasanidarum Paris – Berlin – Wien, Band 2: Ohrmazd I – Ohrmazd II*, Vienna: Austrian Academy of Sciences Press.
- . (2012b) *Sylloge nummorum Sasanidarum Usbekistan*, Vienna: Austrian Academy of Sciences Press.
- Schwarz, J. J. (1991) *Lod (Lydda), Israel: from its origins through the Byzantine period, 5600 B.C.E – 640 C.E.*, Oxford: Archaeopress.
- Sears, D. (2010) *Roman coins and their values: tetrarchies and the rise of the house of Constantine: the collapse of paganism and the triumph of Christianity, Diocletian to Constantine I, A.D. 284-337*, London: Spink and Son Ltd.
- . (2005) *Roman coins and their values, vol. 3: the accession of Maximinus I to the death of Carinus A.D. 235-285*, London: Spink and Son Ltd.

- . (2002) *Roman coins and their values, vol. 2: the accession of Nerva to the overthrow of the Severan dynasty A.D. 96 – A.D. 235*, London: Spink and Son Ltd.
- . (2000) *Roman coins and their values, vol. 1: the republic and the twelve caesars 280 B.C. – A.D. 96*, London: Spink and Son Ltd.
- Sedlar, J. W. (1980) *India and the Greek world: a study in the transmission of culture*, Totaw (NJ): Rowman and Littlefield.
- Sedov, A. V. (1994) 'Qana' (Yemen) and the Indian Ocean: the archaeological evidence' in Ray, H. P. and Salles, J.-F. *Tradition and archaeology: early maritime contacts in the Indian Ocean*, New Delhi: Manohar Publishers, 11-36.
- . (1992) 'New archaeological and epigraphical material from Qana (south Arabia)' *Arabian Archaeological and Epigraphy* 3.2: 110-37.
- Seland, E. H. (2012) 'Trade and Christianity in the Indian Ocean during Late Antiquity' *Journal of Late Antiquity* 5.1: 72-86.
- . (2010) *Ports and political power in the Periplus: complex societies and maritime trade on the Indian Ocean in the first century A.D.*, Oxford: Archaeopress.
- . (2009) 'Shipwreck, maroons and monsters: the hazards of ancient Red Sea navigation' in Blue, L., Cooper, J., Thomas, R. et al. (eds) *Connected hinterlands: proceedings of Red Sea Project IV, held at the University of Southampton (September 2008)*, Oxford: Archaeopress, 179-85.
- . (2008) 'The Indian ships at Moscha and the Indo-Arabian trading circuit' *Proceedings of the Seminar for Arabian Studies* 38: 283-87.
- . (2005) 'Ancient south Arabia: trade and strategies of state control as seen in the "Periplus Maris Erythraei"' *Proceedings of the Seminar for Arabian Studies* 35: 271-8.
- Selvakumar, V. (2008) 'Indo-Roman trade and internal exchange systems of ancient Tamil country' in *The living dead and the lost knowledge*, Thiruvananthapuram: Department of Archaeology, Government of Kerala, 21-8.
- Selvakumar, V. and Darsana, S. (2008) 'Genesis and development of urban processes in the ancient/Early Historic Tamil country' in Sengupta, G. and Chakrabarti, S. (eds) *Archaeology of early historic south Asia*, Kolkata: Pragati Publication and ASTEI, 337-72.
- Selvakumar, V., Gopi, P. K. and Shajan, K. (2005) 'Trial excavations at Pattanam: preliminary report' *Journal of the Centre for Heritage Studies* 2: 57-66.

- Selvakumar, V. and Shajan, K. (2009) 'A note on the coins from Pattanam, Kerala' in Jahan, S. H. (ed.) *Abhijnan studies in South Asian archaeology and art history of artefacts, felicitating A. K. M. Zakariah*, Oxford: Archaeopress, 69-70.
- Selvakumar, V., Shajan, P. and Tomber, R. (2009) 'Archaeological investigations at Pattanam, Kerala: new evidence for the location of ancient Muziris' amphorae' in Tomber, R., Blue, L. and Shinu, A. (eds) *Migrations, trade and people, Part 1: Indian Ocean commerce and the archaeology of western India*, London: British Association for South Asian Studies, 29-41.
- Senior, R. C. and MacDonald, D. (1998) *The decline of the Indo-Greeks: a re-appraisal of the chronology from the time of Menander to that of Azes*, Athens: Hellenic Numismatic Society.
- Sergew, H. S. (1972) *Ancient and medieval Ethiopian history to 1270*, Addis Ababa: United Printers.
- . (1964) *Beziehungen Aethiopiens zur griechisch-römischen Welt*, Bonn: R. Habelt.
- Sernicola, L. and Phillipson, L. (2011) 'Aksum's regional trade: new evidence from archaeological survey' *Azania* 46.2: 190-204.
- Sewell, R. (1904) 'Roman coins found in India' *Journal of the Royal Asiatic Society* 23: 591-637.
- Shajan, P., Tomber, R., Selvakumar, V. et al. (2004) 'Locating the ancient port of Muziris: fresh findings from Pattanam' *Journal of Roman Archaeology* 17: 312-20.
- Singh, A. K. (1988) *Indo-Roman trade: an archaeological perspective*, New Delhi: South Asia Books.
- Sharma, R. S. (1988) 'Problems of peasant protest in early medieval India' *Social Scientist* 16.9: 3-16.
- Sharma, G. R. (1969a) *Excavations at Kausambi 1957-1959*, Allahabad: Allahabad University.
- . (1969b) *Excavations at Kausambi 1949-50*, Delhi: Archaeological Survey of India.
- Shastri, A. M. (1992) 'Early Tamil economy and currency system' *Numismatic Studies* 2: 123-38.
- Sheehan, J. (1995) 'Silver and gold hoards: status, wealth and trade in the Viking Age' *Archaeology Ireland* 9, 19-22.
- Sheikh, A. B. (1976) *History of the western Gangas*, Mysore: Prasaranga, University of Mysore.

- Shipley, D. G. J. (2012) 'Pseudo-Skylax and the natural philosophers' *Journal of Hellenic Studies* 132: 121-38.
- Sidebotham, S. E. (2011) *Berenike and the ancient maritime spice route*, Berkeley: University of California Press.
- . (2007) 'Coins' in Sidebotham, S. E. and Wendrich, Z. (eds) *Berenike 1999/2000: report on the excavations at Berenike, including excavations in Wadi Kalalat and Siket, and the survey of the Mons Smaragdus region*, Los Angeles: Cotsen Institute of Archaeology, University of California, 200-210.
- . (1991a) 'Ports of the Red Sea and the Arabia-India trade' in Begley, V. and De Puma, R. D. (eds) *Rome and India: the ancient sea trade*, Madison: University of Wisconsin Press, 12-38.
- . (1991b) 'University of Delaware archaeological project at Abu Sha'ar: the 1990 season' *Newsletter of the American Research Center in Egypt* 153: 1-6.
- . (1990) 'Review: An ancient passage to India, *The Periplus Maris Erythraei: text with introduction, translation and commentary* by Lionel Casson' *The Classical Review, New Series* 40.1: 16-17.
- . (1989) 'Ports of the Red Sea and the Arabia-India trade' in French, D. H. and Lightfoot, C. S. (ed.) *The eastern frontier of the Roman empire: proceedings of a colloquium held at Ankara in September 1988*, Oxford: Archaeopress, 485-509.
- . (1986a) 'Ports of the Red Sea and the Arabia-India trade' *Münstersche Beiträge zur antiken Handelsgeschichte* 5.2: 16-36.
- . (1986b) *Roman economic policy in the Erythra Thalassa 30 B.C. – A.D. 217*, Leiden: Brill.
- . (1986c) 'Roman Egypt and the Red Sea. Roman economic policy in the Erythra Thalassa 30 B.C. – A.D. 217' in Reade, J. (ed.) *The Indian Ocean in antiquity*, London: Kegan Paul, 287-308.
- Sidebotham, S. E. and Sidebotham, E. (2002) 'Late Roman Berenike' *Journal of the American Research Center in Egypt* 39: 217-40.
- Sidebotham, S. E. and Wendrich, Z. (eds) (2007) *Berenike 1999/2000: report on the excavations at Berenike, including excavations in Wadi Kalalat and Siket, and the survey of the Mons Smaragdus region*, Los Angeles: Cotsen Institute of Archaeology, University of California.
- . (2002) 'Berenike: a Ptolemaic-Roman port on the ancient maritime space and incense route' *Minerva* 13.3: 29-31.



- . (2001-2002) 'Berenike. Archaeological fieldwork at a Ptolemaic-Roman port on the Red Sea coast of Egypt 1999-2001' *Sahara* 13: 23-50.
- . (2000) *Berenike 1998: report of the 1998 excavations at Berenike and the survey of the Eastern Desert, including excavations in Wadi Kalalat and Wadi Abu Greiya*, Los Angeles: Costen Institute of Archaeology.
- . (1999a) 'Berenike: and ancient emporium at the cross-roads of the Mediterranean-Red Sea-Indian Ocean trade' *The Indian Ocean Review* 12.16 Nedlands (Australia): Indian Ocean Centre for Peace.
- . (1999b) *Berenike 1997: report of the excavations at Berenike and the survey of the Egyptian Eastern Desert, including excavations at Shenshef*, Leiden: CNWS (Research School for African, Asian and Amerindian Studies).
- . (1998) *Berenike 1996: preliminary report of the 1996 excavations at Berenike (Egyptian Red Sea coast) and the survey of the Eastern Desert*, Leiden: CNWS (Research School for African, Asian and Amerindian Studies).
- . (1996a) *Berenike 1995: preliminary report of the 1995 excavations at Berenike (Egyptian Red Sea coast) and the survey of the Eastern Desert*, Leiden: CNWS (Research School for African, Asian and Amerindian Studies).
- . (1996b) 'Berenike: Roman Egypt's maritime gateway to Arabia and India' *Egyptian Archaeology* 8: 15-18.
- . (1995) *Berenike 1994: preliminary report of the 1994 excavations at Berenike (Egyptian Red Sea coast) and the survey of the Eastern Desert*, Leiden: CNWS (Research School for African, Asian and Amerindian Studies).
- Silva, R. and Bouzek, J. (1985) 'Mantai – a second Arikamedu?' *Antiquity* 59, 46-7.
- Simpson, S. J. (2008) 'Suburb or slum? Excavations at Merv (Turkmenistan) and observations on stratigraphy, refuse and material culture in a Sasanian city' in Kennet, D. and Luft, P. (eds) *Current research in Sasanian archaeology, art and history: proceedings of a conference held at Durham University, November 3<sup>rd</sup> and 4<sup>th</sup>, 2001*, Oxford: Archaeopress, 65-78.
- Sinha, B. P. and Narain, L. A. (1970) *Pataliputra excavation: 1955-1956*, Patna: Archaeological Museum.
- Smallwood, E. M. (1976) *The Jews under Roman rule: from Pompey to Diocletian*, Leiden: Brill.
- Smith, V. A. (1903) 'The Kushan, or Indo-Scythian period of Indian history, B.C. 165 to A.D. 320' *Journal of the Royal Asiatic Society of Great Britain and Ireland*: 1-64.

- Smith, M. C. and Wright, H. T. (1988) 'The ceramics from Ras Hafun in Somalia: notes on a classical maritime site' *Azania* 23: 115-41.
- Soundara Rajan, K. V. (1994) *Kaveripattinam excavations 1963-73 (a port city on the Tamilnadu coast)*, Delhi: Archaeological Survey of India.
- Special Correspondent (London) (September 21 2010) 'Oxford fellowship for P. J. Cherian' *The Hindu*  
<http://www.thehindu.com/news/states/kerala/article740455.ece>: accessed 22/02/2010.
- (August 3 2010) 'KCHR, British Museum share award' *The Hindu*  
<http://www.thehindu.com/news/states/kerala/article549848.ece>: accessed 22/02/2011.
- Special Correspondent (Kochi) (May 1 2010) 'Surprise find at Pattanam digs' *The Hindu*  
<http://www.thehindu.com/news/cities/Kochi/article419228.ece>: accessed 22/02/2010.
- (March 22 2010) 'Central aid to help Muziris project' *The Hindu*  
<http://www.thehindu.com/news/article261376.ece>: accessed 22/02/2010.
- Srivathsan, A. (May 1 2010) 'In search of Muziris' *The Hindu*  
<http://www.thehindu.com/arts/magazine/article418904.ece>: accessed 22/02/2010.
- . (March 14 2010) 'More evidence unearthed at ancient port of Muziris' *The Hindu*  
<http://www.thehindu.com/arts/history-and-culture/article244338.ece>: accessed 22/02/2010.
- Sridhar, T. S. (ed.) (2005) *Alagankulam: an ancient Roman port city of Tamil Nadu*, Chennai: Department of Archaeology, Government of Tamil Nadu.
- Sridhar, T. S. and Marxia Gandhi, N. (2006) *Select inscriptions of Tamilnadu*, Chennai: Department of Archaeology.
- Srinivasan, P. R. and Reiniche, M.-L. (1989) *Tiruvannamalai: a Saiva sacred complex of south India: inscriptions, vol. 1.1, 1.2*, Pondicherry: Institut Francais Pondicherry.
- Sri Venkateswara University, Tirupati (TN), India, <http://www.svuniversity.in/>: accessed 10/01/2012.
- Staff Reporter (Kochi) (September 13 2012) 'Global meet in Pattanam begins' *The Hindu*  
<http://www.thehindu.com/todays-paper/tp-national/tp-kerala/global-meet-on-pattanam-begins/article3891237.ece>: accessed 13/07/2013.

- (September 26 2010) 'Muziris site will give boost to tourism: Isaac' *The Hindu* <http://www.thehindu.com/news/cities/Kochi/article797129.ece>: accessed 22/02/2010.
- (May 16 2010) 'Pattanam digs rewriting history, says British archaeologist' *The Hindu* <http://www.thehindu.com/sci-tech/science/article431201.ece>: accessed 22/02/2010.
- (March 18 2010) 'Pattanam first habitat site excavated in State, says historian' *The Hindu* <http://www.thehindu.com/news/national/article254052.ece>: accessed 22/02/2010.
- Staff Reporter (Kottayam) (September 17 2010) 'Kerala had unique role in world trade: KCHR Director' *The Hindu* <http://www.thehindu.com/news/states/kerala/article695075.ece>: accessed 22/02/2010.
- Starr, C. G. (1956) 'The Roman emperor and the king of Ceylon' *Classical Philology* 51.1: 27-30.
- Stathakopoulos, D. C. (2004) *Famine and pestilence in the Late Roman and early Byzantine empire: a systematic survey of subsistence crises and epidemics*, Aldershot: Ashgate.
- Steever, S. B. (ed.) (1998) *The Dravidian languages*, London and New York: Routledge.
- Stein, B. (1980) *Peasant state and society in medieval south India*, Delhi: Oxford University Press.
- . (ed.) (1975) *Essays on south India*, Honolulu: University of Hawai'i Press.
- Stillman, N. A. (1973) 'The eleventh-century merchant house of Ibn 'Awkal (a Geniza study)' *Journal of the Economic and Social History of the Orient* 16.1: 15-88.
- Stothers, R. (1984) 'Mystery cloud of A.D. 536' *Nature* 307: 344-45.
- Strauch, I. (ed.) (2013) *Foreign sailors on Socotra: the inscriptions and drawings from the Cave Hoq*, Bremen: Ute Hempen Verlag.
- Subrahmanyam, R., Banerjee, K. D., Khare, M. D. *et al.* (1975) *Nagarjunakonda (1954-1960)*, Delhi: Archaeological Survey of India.
- Subrahmanyam, B. and Joginaidu, P. (2001) *Gold coins of Kakatiya*, Hyderabad: Government of Andhra Pradesh.
- Subrahmanyam, B., Rama Krishna Rao, G. V. and Brahma Chary, P. (2008) *Roman gold coins: a treasure trove from Penuganchiprolu*, Hyderabad: Department of Archaeology and Museums, Government of Andhra Pradesh.

- Sundararajan, S. (1991) *Ancient Tamil country: its social and economic structure*, New Delhi: South Asia Books.
- Sundwall, G. A. (1996) 'Ammianus geographicus' *American Journal of Philology* 117.4: 619-43.
- Sulas, F., Madella, M. and French, C. (2009) 'State formation and water resources management in the Horn of Africa: the Aksumite kingdom of the northern Ethiopian highlands' *World Archaeology* 41.1: 2-15.
- Suresh, S. (2011) 'Symbols of an ancient sea trade' *Minerva* 22.5: 22-4.
- . (2010) 'Rome's sea route to India' *Minerva* 21.5: 28-31.
- . (2007) *Arikamedu: its place in the ancient Rome-India contact*, New Delhi: Development Cooperation Office, Embassy of Italy.
- . (2004) *Symbols of trade: Roman and pseudo-Roman objects found in India*, New Delhi: Manohar.
- Surleau, R. (1946) *Rapport sur le fonctionnement du service des Travaux publics pendant l'année 1942*, Pondicherry: Etablissements français en Inde, service des Travaux Publics.
- Sutton, J. E. G. (2008) 'Aksum: goldfield or vineyards?' *Azania* 43.1: 18-35.
- Taddei, M. (1970) *India*, London: Barrie and Jenkins.
- Talbert, R. J. A. (2010a) *Rome's world: the Peutinger Map reconsidered*, Cambridge: Cambridge University Press.
- . (2010b) *Peutinger map*, supported by Cambridge University Press, <http://peutinger.atlantides.org/map-a/>: accessed 15/6/2013.
- Tarn, W. W. (1938) *The Greeks in Bactria and India*, Cambridge: Cambridge University Press.
- Taylor, L. R. (1985) *The cults of Ostia: Greek and Roman gods, imperial cult, oriental gods*, Chicago: Ares.
- Thapar, R. (1997) 'Early Mediterranean contacts with India: an overview' in De Romanis, F. and Tchernia, A. (eds) *Crossings: early Mediterranean contacts with India*, New Delhi: Manohar Publishers, 11-40.
- . (1996) 'The theory of Aryan race and India: history and politics' *Social Scientist* 24.1: 3-29.

- . (1987) 'Cultural transaction and early India: tradition and patronage' *Social Scientist* 15.2: 3-31.
- The Hindu (Mysore) (February 15 2013) 'Seminar on archaeological, cultural tourism from February 15<sup>th</sup>' *The Hindu*, <http://www.thehindu.com/todays-paper/tp-national/tp-karnataka/seminar-on-archaeological-cultural-tourism-from-february-15/article4409961.ece>: accessed 15/6/2013.
- Thomas, J. (2010) 'The secrets of Sir Bani Yas island unveiled' *The National* (10 December 2010) <http://www.thenational.ae/news/uae-news/ancient-secrets-of-sir-bani-yas-island-unveiled>: consulted 20/09/2013.
- Thomas, R. (2011) 'Roman vessel stoppers' in Peacock, D. and Blue, L. (eds) *Myos Hormos – Quseir al-Qadim: Roman and Islamic ports on the Red Sea, volume 2: finds from the excavations 1999-2003*, Oxford, Archaeopress, 11-34.
- . (2011) 'Terracotta figurines' in Peacock, D. and Blue, L. (eds) *Myos Hormos – Quseir al-Qadim: Roman and Islamic ports on the Red Sea, volume 2: finds from the excavations 1999-2003*, Oxford, Archaeopress, 79-84.
- Thür, G. (1988) 'Zum Seedarlehen kata Mouzerin P. Vindob. G 40822' *Tyche* 3: 229-33.
- . (1987) 'Hypotheken-Urkunde eines Seedarlehens für eine Reise nach Muziris und Apographe für die Tetarte in Alexandria (zu P. Vindob. G. 40.822)' *Tyche* 2: 229-45.
- Thurston, E. (1894) *Madras Government Museum: coins catalogue No. 2, Roman, Indo-Portuguese and Ceylon*, Madras: Government Press.
- . (1888) *Madras Government Museum: coins catalogue No. 2, Roman, Indo-Portuguese and Ceylon*, Madras: Government Press.
- Tibbetts, G. R. (1981) *Arab Navigation in the Indian Ocean Before the Coming of the Portuguese being a translation of Kitāb al-Fawā'id fī usūi al-bahr wa'l-qawā'id of Ahmad b. Mājid al-Najd*, London: The Royal Asiatic Society of Great Britain and Ireland.
- Tieken, H. (2003) 'Old Tamil Cankam literature and the so-called Cankam period' *Indian Economic and Social History Review* 43: 247-78.
- Tomber, R. with Graf, D., Healey, J., Römer-Strehl *et al.* (2011) 'Pots with writing' in Peacock, D. and Blue, L. (eds) (2011) *Myos Hormos – Quseir al-Qadim: Roman and Islamic ports on the Red Sea, volume 2: finds from the excavations 1999-2003*, Oxford, Archaeopress, 5-10.
- Tomber, R. (forthcoming) 'The Roman pottery from Pattanam' in Mathew, K. S. (ed.) *Imperial Rome, Indian Ocean regions and Muziris: recent researches and new perspectives on maritime trade*, New Delhi: Manohar, pagination pending.

- . (2014) 'Living in the Egyptian ports: daily life at Berenike and Myos Hormos' in Boussac, M.-F., Salles, J.-F. and Yon, J.-B. (eds) *Harbours of the Indian Ocean. Proceedings of the Kolkata Colloquium 2011 (Median Project)*, New Delhi: Primus Books, 41-57.
- . (2013) 'Hadrian and Egypt: exchange and embassies in 2<sup>nd</sup>-century trade with the East' in Oppen, T. (ed.) *Hadrian: art, politics and economy*, London: British Museum Press, 112-19.
- . (2009a) 'Beyond western India: the evidence from imported amphorae' in Tomber, R., Blue, L. and Shih, A. (eds) *Migrations, trade and people, Part 1: Indian Ocean commerce and the archaeology of western India*, London: British Association for South Asian Studies, 42-57.
- . (2009b) *Indo-Roman trade: from pots to pepper*, London: Duckworth.
- . (2008) 'The imported pottery at Pattanam: external contacts and trading partners' in *The living dead and the lost knowledge*, Thiruvananthapuram, Department of Archaeology, Government of Kerala: 37-8.
- . (2007a) 'Aksumite sherds from Berenike 1994-2000' in Sidebotham, S. E. and Wendrich, Z. (eds) *Berenike 1999/2000: report on the excavations at Berenike, including excavations in Wadi Kalalat and Siket, and the survey of the Mons Smaragdus region*, Los Angeles: Cotsen Institute of Archaeology, University of California, 175-82.
- . (2007a) 'Roman and Sassanian wine in India' *Minerva* 18.1: 48.
- . (2007b) 'Rome and Mesopotamia – importers into India in the first millennium A.D.' *Antiquity* 81: 972-88.
- . (2005a) 'Amphorae from Pattanam' *Journal for the Centre for Heritage Studies* 2: 67-8.
- . (2005b) 'Aksumite and other imported pottery from Kamrej, Gujarat' *Journal of Indian Ocean Archaeology* 2: 99-102.
- . (2005c) 'Trade relations in the eastern Mediterranean and beyond: the Egyptian-Indian connection' in Berg, M. and Vaag, L. E. (eds) *Trade relations in the eastern Mediterranean from the late Hellenistic period to Late Antiquity: the ceramic evidence*, Odense: Halcarnassian Studies (University Press of Southern Denmark), 221-33.
- . (2004) 'Rome and south Arabia: new artefactual evidence from the Red Sea' *Proceedings of the Seminar for Arabian Studies* 2003 34: 351-60.

- . (2002) 'Roman pottery' in Peacock, D., Blue, L. and Moser, S. (eds) *Myos Hormos – Quseir al-Qadim: a Roman and Islamic port site*, Southampton: University of Southampton: 57-8.
- . (2000) 'Indo-Roman trade: the ceramic evidence from Egypt' *Antiquity* 74: 624-31.
- Trautmann, T. R. and Sinopoli, C. M. (2002) 'In the beginning was the word: excavating the relations between history and archaeology in south Asia' *Journal of the Economic and Social History of the Orient* 45.4: 492-523.
- Trethewey, K. (2012) 'The oldest known ship in the Indian Ocean: logistics for an upcoming INA excavation' *Institute of Nautical Archaeology Quarterly* 39, 28-9.
- Tripathi, V. (1976) *The Painted Grey Ware – an Iron Age culture of northern India*, Delhi: Concept.
- Turcan, R. (2000) *The gods of ancient Rome: religion in everyday life from archaic to imperial times*, Edinburgh: Edinburgh University Press.
- Turner, P. J. (1989) *Roman coins from India*, London: Royal Numismatic Society.
- Turner, P. and Cribb, J. (1996) 'Numismatic evidence for the Roman trade with ancient India' in Reade, J. (ed.) *The Indian Ocean in Antiquity*, London: Kegan Paul, 309-19.
- Tuttle, C. (2013) 'Preserving Petra sustainably (one step at a time): the temple of The Winged Lions, cultural resource management initiative as a step forward' *Journal of Eastern Mediterranean Archaeology and Heritage Studies* 1.1: 1-23.
- Unaccredited Slideshow (June 19 2010) 'Slideshow: Pattanam excavations – reconstructing life' *The Hindu*  
<http://www.thehindu.com/news/states/article473593.ece>: accessed 22/02/2011.
- Van Heesch, J. (2011) 'Quantifying Roman imperial coinage' in de Callatay, F. (ed.) *Quantifying monetary supplies in Greco-Roman times*, Bari: Pragmateiai, 311-28.
- Van Lohuizen-de Leeuw, J. E. (1949) *The "Scythian" period: an approach to the history, art, epigraphy and palaeography of North India from the 1<sup>st</sup> century B.C. to the 3<sup>rd</sup> century A.D.*, Leiden: Brill.
- Venkataramanayya, N. (1969) *Epigraphica Andhrica*, volume 1, Secunderabad: Director of Archaeology and Museums, Government of Andhra Pradesh.
- Venkataramanayya, N., and Parabrahma Sastry, P. V. (1974a) *Epigraphical Andhrica*, volume 2, Hyderabad: Government of Andhra Pradesh.

- . (1974b) *Epigraphical Andhrica*, volume 3, Hyderabad: Government of Andhra Pradesh.
- Veuve, S., Liger, J.-C. and Lecuyot, G. (1987) *Fouilles d'Ai Khanoum. VI, Le gymnase : architecture, céramique, sculpture*, Paris: Diffusion de Boccard.
- Vincent, N. and Wickham, C. (eds) (2013) *Debating open access*, London: the British Academy.
- Walburg, R. (2008) *Coins and tokens from ancient Ceylon*, Wiesbaden: Reichert Verlag.
- . (2006) 'Rome beyond its eastern frontiers: "chicken feed copper" in ancient Sri Lanka. The impact of a foreign currency on the local economy' *XIV International Economic History Congress*, Helsinki:  
<http://www.helsinki.fi/iehc2006/papers1/Walburg.pdf> (accessed 14/10/2008).
- . (1998a) 'New evidence on the so-called Indo-Roman coin imitations from Sri Lanka' in Jha, A. K. and Garg, S. (eds) *Ex moneta: essays on numismatics in honour of Dr David W. MacDowall*, New Delhi: Harman Publishing House, 151-62.
- . (1998b) 'Roman coins on Ceylon: a puzzling and hardly known chapter of ancient numismatics' in Domroes, M. and Roth, H. (eds) *Sri Lanka, past and present: archaeology, geography, economics*, Weikersheim: Margraf Verlag, 52-60.
- . (1993) 'Ancient Ruhuna (Sri Lanka). The coins of Tissamaharama' *Beiträge zur allgemeine und vergleichende Archäologie* 13, 167-70.
- . (1985) 'Antike Münzen aus Sri Lanka. Die Bedeutung römischer Münzen und ihrer Nachahmungen für den Geldumlauf auf Ceylon' *Studien zu Fundmünzen der Antike* 3: 27-260.
- Walburg, R. and Graham, A. J. (2013) 'The coins' in Carswell, J., Deraniyagala, S. U. and Graham, A. J. (eds) *Mantai: city by the sea*, Aichwald: Linden Soft Verlag, Appendix 3.
- Wallace-Hadrill, J. M. (1971) *Early Germanic kingship in England and on the continent*, Oxford: the Clarendon Press.
- Wang, H. (2004) *Money on the Silk Road: the evidence from Eastern Central Asia to c. AD 800, with a catalogue of the coins collected by Sir Aurel Stein*, London: the British Museum Press.
- Ward, W. D. (2007) 'Aila and Clysmā: the rise of northern ports in the Red Sea in late antiquity' in Starkey, J., Starkey, P. and Wilkinson, T. (eds) *Natural resources and cultural connection of the Red Sea*, Oxford: Archaeopress, 161-71.
- Warmington, E. H. (1928) *Commerce between the Roman Empire and India*, Cambridge: Cambridge University Press. *Studien zu Fundmünzen der Antike*.



- Warner Slane, K. (1991) 'Observations on Mediterranean amphoras and tablewares found in India' in Begley, V. and De Puma, M. D. (eds) *Rome and India: the ancient sea trade*, Madison: University of Wisconsin Press, 204-15.
- Weber, E. (ed.) (1976) *Tabula Peutingeriana: Codex Vindobonensis 324*, Graz: Akademische Druck und Verlagsanstalt.
- Weerakkody, D. P. M. (1997) *Taprobanê: ancient Sri Lanka as known to Greeks and Romans*, Turnhout: Brepols.
- Weitzmann, K. (1970) *Illustrations in roll and codex: a study of the origin and method of text illustration*, Princeton: Princeton University Press.
- Wendrich, Z. (2007) 'Basketry and matting' in Sidebotham, S. E. and Wendrich, Z. (eds) *Berenike 1999/2000: report on the excavations at Berenike, including excavations in Wadi Kalalat and Siket, and the survey of the Mons Smaragdus region*, Los Angeles: Cotsen Institute of Archaeology, University of California, 228-32.
- Wendrich, Z., Tomber, R., Sidebotham, S. E. *et al.* (2003) 'Berenike crossroads: the integration of information' *Journal of the Economic and Social History of the Orient* 46.1: 46-87.
- West, V. (2006) 'Recent research on Aksumite coinage' *London Numismatic Club Newsletter* 8.9: 15-24.
- West, V. (2005) 'A variant legend for Wazena of Aksum' *Oriental Numismatic Society Newsletter* 184: 8-9.
- West, V. (2004) 'A gold variety of Ezanas of Aksum from India' *Oriental Numismatic Society Newsletter* 180: 4.
- West, V. (2003a) 'An English collection of Aksumite coins' *Oriental Numismatic Society Newsletter* 176: 5-6.
- West, V. (2003b) 'The Aksumite coins in the Fitzwilliam Museum' *Oriental Numismatic Society Newsletter* 175: 31.
- West, V. (2002) 'The Ashmolean collection of Aksumite coins' *Oriental Numismatic Society Newsletter* 171: 9-11.
- Wheeler, R. E. M. (1976) *My archaeological mission to India and Pakistan*, London: Thames and Hudson.
- . (1955) *Still digging: interleaves from an antiquary's notebook*, London: Michael Joseph.
- . (1954a) *Archaeology from the earth*, Oxford: the Clarendon Press.

- . (1954b) *Rome beyond the imperial frontiers*, London: G. Bell and Sons Ltd.
- . (1951) 'Roman contact with India, Pakistan and Afghanistan' in Grimes, W. F. (ed.) *Aspects of archaeology in Britain and beyond*, London: H. W. Edwards, 345-81.
- Wheeler, R. E. M., Ghosh, A. and Deva, K. (1946) 'Arikamedu: an Indo-Roman trading station on the east coast of India' *Ancient India* 2: 17-124.
- Whitcomb, D. S. (1983) 'Quseir al-Qadim: a port on the Egyptian coast of the Red Sea' *Proceedings of the Seminar for Arabian Studies* 13: 103-5.
- Whitcomb, D. S. and Johnson, H. (1982) *Quseir al-Qadim 1980: preliminary report*, Malibu (CA): Udena.
- Whitcomb, D. S. and Johnson, J. H. (1979) *Quseir al-Qadim 1978: preliminary report*, Cairo: American Research Center in Egypt.
- Whitehouse, D. (2009) *Siraf: history, topography and environment*, Oxford: Oxbow Books.
- Whitehouse, D. (1996) 'Sasanian maritime activity' in Reade, J. (ed.) *The Indian Ocean in Antiquity*, London: Kegan Paul, 339-49.
- Whitehouse, D. (1991) 'Epilogue: Roman trade in perspective' in Begley, V. and De Puma, M. D. (eds) *Rome and India: the ancient sea trade*, Madison: University of Wisconsin Press, 216-18.
- Whitehouse, D. (1973) 'Chinese stoneware from Siraf: the earliest finds' *South Asian Archaeology* 1: 241-55.
- Whitehouse, D. (1972) 'Excavations at Siraf: fifth interim report' *Iran* 10: 63-87.
- Whitehouse, D. (1970) 'Siraf: a medieval port on the Persian Gulf' *World Archaeology* 2.2: 141-58.
- Whitewright, J. (2011) 'Wooden artefacts' in Peacock, D. and Blue, L. (eds) (2011) *Myos Hormos – Quseir al-Qadim: Roman and Islamic ports on the Red Sea, volume 2: finds from the excavations 1999-2003*, Oxford, Archaeopress, 167-78.
- Wickham, C. (2005) *Framing the early middle ages: Europe and the Mediterranean 400-800*, Oxford: Oxford University Press.
- Wigen, K. (2006) 'Oceans of history: an introduction' *The American Historical Review* 111.3: 717-21.
- Wild, J. P. and Wild, F. C. (2007) 'Textiles' in Sidebotham, S. E. and Wendrich, Z. (eds) (2007) *Berenike 1999/2000: report on the excavations at Berenike, including*

- excavations in Wadi Kalalat and Siket, and the survey of the Mons Smaragdus region*, Los Angeles: Cotsen Institute of Archaeology, University of California, 225-7.
- Wild, J. P. and Wild, F. C. (2005) 'Rome and India: early Indian cotton textiles from Berenike, Red Sea coast of Egypt' in Barnes, R. (ed.) *Textiles in Indian Ocean societies*, London: Routledge Curzon, 11-16.
- Will, E. L. (1991) 'The Mediterranean shipping amphoras from Arikamedu' in Begley, V. and De Puma, R. D. (eds) *Rome and India: the ancient sea trade*, Madison: University of Wisconsin Press, 151-6.
- Wilson, H. H. (1832) 'Description of select coins from originals or drawings in the possession of the Asiatic Society' *Asiatick Researches* 17: 559-606.
- Wroth, W. W. (1903) *Catalogue of the coins of Parthia*, London: British Museum.
- Yoshiko Reed, A. (2009) 'Beyond the Land of Nod: Syriac images of Asia and the historiography of "the West"' *History of Religions* 49.1: 48-87.
- Young, G. (2001) *Rome's eastern trade: international commerce and imperial policy, 31 B.C. – A.D. 305*, London: Routledge.
- Young, G. (1997) 'The customs-officer at the Nabataean port of Leuke Kome ("Periplus Maris Erythraei" 19)' *Zeitschrift für Papyrologie und Epigraphik* 119: 266-68.
- Zarins, J. (1996) 'Obsidian in the larger context of predynastic/archaic Egyptian Red Sea trade' in Reade, J. (ed.) *The Indian Ocean in Antiquity*, London: Kegan Paul, 89-106.
- Zazzaro, C. (2009) 'Adulis and the Eritrean coast in museum collection and Italian and other European travellers' accounts' in Blue, L., Cooper, J., Thomas, R. *et al.* (eds) *Connected hinterlands: proceedings of Red Sea Project IV, held at the University of Southampton (September 2008)*, Oxford: Archaeopress, 49-59.
- Ziegert, H. (2002) *Archaeology as history*, Hamburg: H. Ziegert.
- Ziegert, H. (1995) 'Der aktualistische Vergleich als Grundlage archäologisch-historischer Interpretation' *Ethnographisch-Archäologische Zeitschrift* 35: 177-98.
- Ziegert, H. (1980) 'Objektorientierte und problemorientierte Forschungsansätze in der Archäologie' *Hephaistos* 2: 53-65.
- Zoch, P. A. (1998) *Ancient Rome: an introductory history*, Norman (OK): University of Oklahoma Press.
- Zvelebil, K. V. (1992) *Companion studies to the history of Tamil literature*, Leiden: Brill.

Zvelebil, K. V. (1973) *The smile of Murugan. On Tamil literature of south India*, Leiden: Brill.