EurASEAA14 Volume I Ancient and Living Traditions

Papers from the Fourteenth International Conference of the European Association of Southeast Asian Archaeologists

Edited by Helen Lewis



Access Archaeology



About Access Archaeology

Access Archaeology offers a different publishing model for specialist academic material that might traditionally prove commercially unviable, perhaps due to its sheer extent or volume of colour content, or simply due to its relatively niche field of interest. This could apply, for example, to a PhD dissertation or a catalogue of archaeological data.

All *Access Archaeology* publications are available as a free-to-download pdf eBook and in print format. The free pdf download model supports dissemination in areas of the world where budgets are more severely limited, and also allows individual academics from all over the world the opportunity to access the material privately, rather than relying solely on their university or public library. Print copies, nevertheless, remain available to individuals and institutions who need or prefer them.

The material is refereed and/or peer reviewed. Copy-editing takes place prior to submission of the work for publication and is the responsibility of the author. Academics who are able to supply print-ready material are not charged any fee to publish (including making the material available as a free-to-download pdf). In some instances the material is type-set in-house and in these cases a small charge is passed on for layout work.

Our principal effort goes into promoting the material, both the free-to-download pdf and print edition, where *Access Archaeology* books get the same level of attention as all of our publications which are marketed through e-alerts, print catalogues, displays at academic conferences, and are supported by professional distribution worldwide.

The free pdf download allows for greater dissemination of academic work than traditional print models could ever hope to support. It is common for a free-to-download pdf to be downloaded hundreds or sometimes thousands of times when it first appears on our website. Print sales of such specialist material would take years to match this figure, if indeed they ever would.

This model may well evolve over time, but its ambition will always remain to publish archaeological material that would prove commercially unviable in traditional publishing models, without passing the expense on to the academic (author or reader).



EurASEAA14 Volume I Ancient and Living Traditions

Papers from the Fourteenth International Conference of the European Association of Southeast Asian Archaeologists

Edited by Helen Lewis

Access Archaeology





ARCHAEOPRESS PUBLISHING LTD Summertown Pavilion 18-24 Middle Way Summertown Oxford OX2 7LG www.archaeopress.com

ISBN 978-1-78969-505-2 ISBN 978-1-78969-506-9 (e-Pdf)

© the individual authors and Archaeopress 2020

All images by individual authors, except where noted.

Cover image: Conor McDermott, from an image by Helen Lewis; 'face pot' from the Dewil Valley, Palawan, Philippines.

All rights reserved. No part of this book may be reproduced, stored in retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying or otherwise, without the prior written permission of the copyright owners.

This book is available direct from Archaeopress or from our website www.archaeopress.com

Contents

Dedicationiii
Contributorsiv
Editorial introduction to EurASEAA14 Volumes 1 and 2vi Helen Lewis
Events in the Life of the Buddha: Pagan sculptures in the Hermitage collection and their context in the art of mainland Southeast Asia
A note on two peculiar stone pedestals in the form of atlas dwarfish figures (yakṣas)12 Valérie Zaleski
Representations of the female in Thai Buddhist manuscript paintings
Prajñāpāramitā in thirteenth century Java and Sumatra: two sculptures disconnected by textile designs
Islamic calligraphy, re-interpreted by local genius in Javanese mosque ornamentation, Indonesia (fifteenth century CE to present)
Understanding the Champa polity from archaeological and epigraphic evidence – a critical stocktaking
A tale of two Khmer bronzecasting families, the Chhem and the Khat: how traditional bronzecasting revived in the area around Phnom Penh after the Khmer Rouge (1975-1979), and the expansion and modernization of that tradition in the 1990s: a preliminary report
The history and distribution of the free-reed mouth-organ in Southeast Asia94 Roger Blench
The ethnoarchaeology of Southeast Asian foragers: resiliency in Ata indigenous knowledge and cultural expression in the pre-Hispanic and Hispanic Philippines
Megalithic rituals of the Maram tribe of Manipur 121 Binodini Devi Potshangbam
The hidden, unique, bronze battleship from Mt. Dobo, East Flores, Indonesia, assumed to date to the Dong-So'n period

Kattigara of Claudius Ptolemy and Óc Eo: the issue of trade between the Roman Empire and Funan in the Graeco-Roman written sources
Kasper Hanus and Emilia Smagur
Cowries in southwestern China, and trade with India and Myanmar in ancient and modern times
The source of the seashells and ivories found in southwest China in the pre-Qin Period157 Duan Yu
Southeast Asia and the development of advanced sail types across the Indian Ocean163 Tom Hoogervorst
Mediaeval Fansur: a long-lost harbor in Aceh 174 Edmund Edwards McKinnon and Nurdin A.R.
'The world turned upside down': sago-palm processors in northeast India and the origins of Chinese civilization
Bibliography

Dedication

This volume is dedicated to five EurASEAA colleagues.

Asok Datta, the organizer of the EURASEAA14 'Living Tradition' panel, passed away not long before the conference in 2012. He was well known for his work on Indian prehistory, especially of West Bengal, and in ethnoarchaeology, and carried out his research and teaching at the University of Calcutta. Dr Datta had run several conference panels on the theme of ethnoarchaeology, and was focusing in EurASEAA14 on both Southeast and South Asian studies, and how these relate to each other. Through the efforts of the rest of the panel participants we were able to continue with his panel, dedicated to his memory. Papers from that panel are found in both of the EURASEAA14 volumes. An obituary for Dr Datta was written by S. Bhattacharya in 2012, entitled 'Dr Asok Datta. In Dandabhu kti...reclaiming the past.' This can be found at http://dandabhukti.chitrolekha.com/dr-asok-datta/, (viewed 26 November 2019).

Pamela Gutman, who passed away on March 30, 2015, was a major contributor to ancient Burmese studies. Dr Gutman was an Honorary Associate in the Department of Art History and Film Studies at the University of Sydney. Her main research interests were the early art and architecture of Southeast Asia, especially Burma. Her doctoral dissertation was on the cultural history of Arakan (Rakhine), and she researched ancient Burmese art, Sanskrit scripts and inscriptions, and regional art history. Her paper with Olga Deshpande from EurASEAA14 is presented in this volume. An obituary for Dr Gutman was published by B. Hudson, entitled 'Life and work of a scholar of Arakan: Pamela Gutman, 1944-2015.' This can be found in the *Journal of Burma Studies* 19 (2): 275-280.

Herwig Zahorka passed away in 2019. He was a researcher in cultural anthropology and archaeology, as well as forest ecosystems, and his work in Southeast Asia focused on rainforest cultures in Indonesia and the history of their study. He wrote on ethnography, environment and the history of Java and Borneo, and his article in this volume is focused on the origins of a special bronze boat model taken care of by a community in Flores. Obituaries for Herwig Zahorka can be seen at: <www.kohoutikriz.org/autor. html?id=zahor&t=p>, (viewed 28 December 2019).

Ian Glover was a founder of EurASEAA, and a major influence on Southeast Asian archaeology research and teaching globally, but especially in Europe, where he was based at the Institute of Archaeology at University College London since the 1970s, retiring as Reader in the Archaeology of Southeast Asia. His work was wide-ranging, spanning island and mainland Southeast Asia, and including prehistory and early civilizations. Prof Glover was very encouraging about having the EurASEAA14 conference in Dublin, and, as someone who co-edited previous EurASEAA proceedings, he would surely be delighted that these volumes are finally out. An obituary for Ian Glover written by Cristina Castillo can be found at: https://www.ai-journal.com/articles/10.5334/ai-390/, (viewed 26 November 2019).

Claude Jacques gave a keynote speech at EurASEAA14 on historical research in Southeast Asian archaeology. He carried out extensive work in the epigraphy and history of mainland Southeast Asia, especially of Cambodia, and was a lecturer and long-time researcher through EFEO and EPHE. He was a special advisor to UNESCO for Angkor, and was part of the establishment of the Friends of Angkor Association. An obituary for Prof Jacques can be found at: <vatphou-champassak.com/index.php/realizations-2/claude-jacques> (viewed 28 April 2020).

Contributors

Jane P. Allison is an independent researcher. Her main interest is in the field of mainland Southeast Asian bronze casting, its history and techniques in a historical and cultural context. Email: janepallison@gmail.com.

Bishnupriya Basak is an associate professor at the Department of Archaeology, Calcutta University in Kolkata. Her main research interests are the prehistory of India, historiography, archaeological theory and heritage studies. Email: basak.bishnupriya@gmail.com.

Roger Blench is an ethnomusicologist, linguist and archaeologist, specializing in Southeast Asia and sub-Saharan Africa. He is currently affiliated with the McDonald Institute for Archaeological Research at the University of Cambridge, and the Department of History at the University of Jos. He is the Chief Research Officer of the Kay Williamson Educational Foundation. Email: rogerblench@yahoo.co.uk.

Olga Deshpande was Senior Curator and Head of the Far Eastern Section, Oriental Department, Indian and Southeast Asian collections, The Hermitage Museum, St. Petersburg. She retired in 2018. Email: olga.deshpande@gmail.com.

Duan Yu is a professor at the Institute of History, Sichuan Academy of Social Sciences, and the Center for Bashu Cultural Studies, Sichuan Normal University. Duan Yu's main research interests are in the fields of history, archaeology and anthropology. Email: dyu55@126.com.

Edmund Edwards McKinnon is a long-term resident in Indonesia and was formerly an honorary research associate at the Institute of Southeast Asian Studies, Nalanda Srivijaya Centre in Singapore. His main research interests in archaeology and art history are the impact of medieval inter-regional trade and religion on the island of Sumatra. He specializes in imported and local ceramic wares and is concerned with heritage site conservation and management. Email: uluneezen@gmail.com.

Pamela Gutman, who passed away on March 30, 2015, was an honorary associate in the Department of Art History and Film Studies at The University of Sydney. Her main research interests were the early art and architecture of Southeast Asia, especially Burma.

Kasper Hanus is a research fellow of the Polish Academy of Sciences. He finished his doctoral studies at Adam Mickiewicz University in Poznań and graduated from Jagiellonian University in Cracow. His studies are devoted to the historical ecology and socio-hydrology of Asia. He has contributed to research projects in Cambodia, China, Cyprus, Laos, Myanmar and Nepal. Email: kasper.hanus@gmail.com.

Tom Hoogervorst finished his DPhil at the University of Oxford on ancient Southeast Asian influence on the wider Indian Ocean. His research focuses on language history and lexical borrowing in Southeast Asia, with a focus on Malay and Javanese. Tom works at the Royal Netherlands Institute of Southeast Asian and Caribbean Studies (KITLV), writing a book on the language practices of Indonesia's Chinese community in late colonial times. His other interests include maritime archaeology, food history, and historical linguistics. Email: hoogervorst@kitlv.nl.

Jana Igunma is Henry Ginsburg Curator for Thai, Lao and Cambodian at the British Library. Her main research interests include Thai, Lao, Cambodian and Shan manuscripts and the art of manuscript painting, as well as manuscript production and preservation in mainland Southeast Asia. She was lead curator of the exhibition 'Buddhism' at the British Library 2019-2020 and co-authored the book *Buddhism Illuminated: Manuscript Art from Southeast Asia* (London: British Library, 2018). Email: jana.igunma@bl.uk.

Hee Sook Lee Niinioja specializes in text and image, Hindu-Buddhist-Christian-Islamic architectural ornamentation, and Scandinavian design. As an Asian pioneer in Scandinavia in the 1970s, she earned BAs (journalism, design), MAs (calligraphy, visual communication), and a PhD (architecture). She volunteered to do humanitarian work and teaching, trying to enhance intercultural communication between different religions. She was honored with the Civil Merit Medal by the President of South Korea. Besides her commitment to ICICH-ICOMOS, she has been engaged in art, journalism, and research since her return to Finland. Email: leeheesook@hotmail.com.

Helen Lewis is an associate professor at University College Dublin School of Archaeology. Her research in Southeast Asia has mostly focused on cave sites in Laos, Malaysian Borneo, and the Philippine island of Palawan, where she co-directs the Palawan Island Palaeohistory Research Project. She chaired the EurASEAA14 Conference in Dublin in 2012. Email: helen.lewis@ucd.ie.

Nurdin A.R. is a lecturer at the Universitas Islam Negeri Ar-Raniry Kukuhan (UIN) in Banda Aceh, and was formerly Director of the Museum Negeri Aceh, whose main research interests are the conservation and understanding of historical Islamic manuscripts and the conservation of Acehnese cultural heritage. Email: atjehdirham@gmail.com.

Binodini Devi Potshangbam is an associate professor at P.G. Department of Anthropology, D.M. College of Science, D.M. University, Imphal, who is interested in the fields of ethnoarchaeology, rock art, and visual anthropology. Email: binodini96@gmail.com.

Lesley Pullen is an art historian, with a focus on medieval South and Southeast Asian material cultures. She completed a Postgraduate Diploma in Asian Art, a Taught Masters, and a PhD at SOAS, University of London. Her PhD dissertation (2017) was entitled 'Representation of textiles on classical Javanese sculpture', and addressed the repeat patterns evident on certain Hindu-Buddhist figurative sculpture from Java in the ninth to fourteenth centuries. She was then appointed a SOAS Post-doctoral Research Associate for two years. Her teaching record includes Tutor of the 'Southeast Asian Art' modules on the Postgraduate Diploma programme at SOAS, and with the 'Arts of Asia' programme at the Victoria and Albert Museum. A monograph entitled *Patterned Splendour* based on her PhD dissertation is anticipated in 2020. Email: Pullen.london@btinternet.com.

Emilia Smagur is an assistant professor at the Institute of Archaeology, University of Warsaw. She obtained her PhD from the Institute of Archaeology, Jagiellonian University. Her main research interests are the archaeology and art of Central and South Asia. She has participated in archaeological excavations in Bulgaria, Cambodia, Cyprus, India, Israel, Nepal and Ukraine (Crimean Peninsula). Email: emilia.smagur@gmail.com.

Larissa Smith is a PhD candidate/ABD in the Anthropology Department at the University of Illinois at Chicago, whose main research interests lie in the field of ethno-archaeology among foragers of Southeast Asia. Email: lmsmith4@uic.edu.

Xiao Minghua is based at the Yunnan Provincial Institute of Cultural Relics and Archaeology and Southeast Asian Archaeology Centre, Kunming. Email: 291992412@qq.com.

Herwig Zahorka passed away in 2019. He was a researcher in cultural anthropology and archaeology, as well as forest ecosystems, and his work in Southeast Asia focused on rainforest cultures in Indonesia and the history of their study. He wrote on ethnography, environment and the history of Java and Borneo.

Valérie Zaleski is curator at Musée Guimet, Paris. Email: valerie.zaleski@guimet.fr

Editorial introduction to EurASEAA14 Volumes 1 and 2

Helen Lewis

The Fourteenth International Conference of the European Association of Southeast Asian Archaeologists (EurASEAA14) was held in Dublin from September 18-21, 2012, hosted by University College Dublin School of Archaeology. The conference took place at Dublin Castle Conference Centre and the Chester Beatty Library, in the heart of the capital, bringing together archaeologists, art historians, ethnographers and philologists who share a common interest in the past of Southeast Asia. The aim of EurASEAA is to facilitate communication between different disciplines, to present current work in the field, and to stimulate future research. This international initiative aims to foster international scholarly cooperation in the field of Southeast Asian archaeology, art history and philology.

These volumes are rather late in publishing articles based on talks given at the 2012 conference. The articles have been updated to 2019 by the authors; several others based on the proceedings have been published elsewhere in the interim. Some of the articles in this volume have been individually refereed by anonymous reviewers, while others have not. Where a chapter has been refereed a note is made to this effect in the acknowledgements.

I am especially grateful to Michael Ryan, Jimmy Deenihan, Colin Toomey and to the late Paedar Caffrey, who arranged the donation of Dublin Castle Conference Centre and the Chester Beatty Library lecture theatre for the EurASEAA14 conference. Fionnuala Croke and Lisa Fitzsimons at the Chester Beatty Library, and Úna Kearney, Denis McCarthy and Darren Lennox at Dublin Castle enabled, informed and assisted us in many ways to make the conference possible, professional and enjoyable, in the best venue in Dublin. The donation of the conference center was the main factor that made it possible for the UCD School of Archaeology to decide to proceed with our EurASEAA14 bid.

EurASEAA strives to find funds for inviting Southeast Asian colleagues to participate in its conferences in Europe, and for EurASEAA14 we were grateful to receive a Wenner Gren Conference Grant to help meet this specific aim. This grant enabled twenty-five scholars who would otherwise not have been able to attend to come to Dublin from Southeast and South Asia, by meeting part-costs for each of them. In addition, the conference was able to waive fees for these scholars, on the basis of earmarking contributing funds coming from conference fees. We were also able to offer day rates and student discounts, which enabled many more people from Ireland and the EU to attend at least part of the conference. Additional financial assistance was provided by the Irish Research Council, which helped to support the excellent conference assistance work of Kim Rice for several months, and through assistance from the UCD College of Arts and Celtic Studies for digital recording. The UCD Finance Office and Research Office provided enormous assistance, and the College of Arts and Celtic Studies provided management of funds and significant advice regarding online payments, accounting, and bank arrangements, and I am particularly grateful to Niall McLernon for his help in these matters. The School of Archaeology administered day-to-day payments and accounts, and established and ran the EurASEAA14 website, which was designed by Phoebe France, with later additions and modifications by Robert Sands. I am extremely grateful for the support and help of all my colleagues in the School, and particularly to Angela McAteer, Conor McDermott, Rob Sands, Tadhg O'Keeffe, Muiris O'Sullivan and Gabriel Cooney for their ideas, their know-how, and their time.

EurASEAA held its first conference in London in 1986, and the biannual conference has since moved around various European cities. There have been EurASEAA conferences in Belgium (Brussels 1990), France (Paris 1988 and 1994, Bougon 2006, Nanterres 2015), Germany (Berlin 1998 and 2010), Ireland (2012), Italy (Rome 1992, Sarteano 2000), Poland (Poznań 2017), Sweden (Sigtuna 2002), The Netherlands (Leiden 1996 and 2008), and the United Kingdom (London 1986 and 2004). All the conferences are run by locally-organized committees, but with substantial assistance and advice from the EurASEAA Executive Committee. For EurASEAA14 a conference academic committee was established to make decisions about panel, paper and poster proposals, and I would like to formally thank my colleagues who served on this committee: the late KJ Chang (then at University College London), Peter Lape (University of Washington), Victor Paz (University of the Philippines), Alan Peatfield (University College Dublin), and T. Oliver Pryce (then at University College London). In addition, Valérie Zaleski and Arlo Griffiths helped with the epigraphy papers. I am also very grateful to the Executive Committee from 2010-2019 for choosing UCD and Dublin in 2012, and for their continued help over the conference and publication period, especially Lis Bacus, Alex Green, John Guy, Pierre-Yves Manguin, Mai Lin Tjoa-Bonatz, Marijke Klokke, Bérénice Bellina and Oli Pryce. I am also grateful for discussions with Vince Pigott, Roger Blench, and the late Ian Glover.

For EurASEAA14 we invited papers and panels on any topic or theme related to Southeast Asian archaeology, including papers on South Asia and East Asia, which are important for issues of long-distant contact and regional modelling. As 2012 was also the year that Dublin was European City of Science, we proposed one special theme on 'Science, Archaeology and Heritage in Southeast Asia', which stimulated the submission of themed panels on archaeobotany, geoarchaeology and human bioarchaeology, as well as several papers specifically related to science topics in other panels.

Proposed panels ranged widely in topic, covering many themes in Southeast Asian regional archaeology. In addition, at the fourteenth international meeting we included a more formally-structured set of panels on epigraphy and manuscripts, the former through an initiative from within the Southeast Asian epigraphy community, and the latter primarily through the links of one of the conference's host institutions: the Chester Beatty Library, which is home to a world-class collection of manuscripts, notably studied by the late Henry Ginsburg of the British Library. There was also a special focus at EurASEAA14 on Southeast Asian ceramics, building on momentum from an international workshop hosted by the University of Pennsylvania Museum and Smithsonian Institution in late 2010, and two panels on Khmer archaeology, including one specializing in Khmer stone materials which was funded by the Edward W. Forbes Fund, Freer Gallery of Art, Smithsonian Institution. I am very grateful to Janet Douglas and Stacy Bowe at the Smithsonian Institution for organizing the latter and dealing with the funding issues involved from the US end. Additional sub-regional panels related mainly to certain important 'peripheries', 'crossroads' or 'boundaries' of Southeast Asia – Taiwan, Myanmar and northeast India - which brought a focus on these areas of interaction, continuing some of the themes of the EurASEAA13 conference in Berlin related to crossing borders and connections (Tjoa-Bonatz et al. 2012a-b). I am very grateful to all of the panel proposers and organisers for their efforts and expertise. The papers presented in this two volume set represent most of the conference panels.

I am also very grateful to the key-note speakers at EurASEAA14 – Joyce White and the late Claude Jacques – who spoke about the future and past of Southeast Asian archaeology and historical research. In addition, we had three special public lectures hosted by the Chester Beatty Library as part of the Dublin City of Science festival, by Charles Higham, John Miksic and Hiram Woodward. Charles Higham's lecture was supported by a book launch event hosted by River Books. Finally, we held a special public seminar hosted by UCD School of Archaeology, given by Matthew Spriggs. All these events were extremely well-

attended and well-received, and were aimed at promoting Southeast Asian archaeology and historical studies to the public and scholarly communities in Ireland. I am very grateful to all the special lecturers involved in these events, which truly enriched the conference and inspired in so many ways, and to Gabriel Cooney and Alan Peatfield for hosting the Chester Beatty archaeology lectures.

The following individuals helped to promote the conference, and donated their time and expertise to organizing the website, social events and conference discounts, fundraising and outreach to the local community in Dublin and Ireland: Kim Rice, Patrizia La Piscopia, Margaret Williams, David McGahan, Hjayceelyn Quintana, Martin Murray, Piet Patricio, Chris Flynn, Edy Muttaqin, Denis O'Reilly, Elaine Hickey, Susan Delahunty, Aibhe Roche, Steve McPhilemy, Anne-Marie Diffley, Sheila Dooley, Jim Quinn and Martin Kelly. I would particularly like to thank Terry O'Hagan and Stephen Harrison for donating their time to give conference tours, and Kasper Hanus for his time and help with technology in the Chester Beatty panels. I am also very grateful to all our panel organizers, chairs, and speakers for their participation, for local fund-raising initiatives, and their logistical savvy. Kim Rice, Patrizia La Piscopia and Margaret Williams are stars for being delegated with major tasks, and I am thankful to all our volunteers in Dublin for their help and enthusiasm in all manner of things. And for reading and re-reading (and re-reading) the abstracts for copy-editing, I am very grateful to Yvette Balbaligo, Andrew Cowan and David McGahan, and to Rob Sands for continually updating them online. Rob Sands and Conor McDermott managed the website, promotional materials and the putting together of the abstracts booklet; without their expertise the conference would not have been possible.

Finally, I would like to express my gratitude to all the contributing authors of these volumes, and my apologies to those who contributed but had to withdraw due to the time delay in publication, for which I take full responsibility. I am extremely grateful to the anonymous colleagues who were involved in the lengthy process of refereeing, where this happened. The following individuals assisted in the production of these volumes: Michael J. Allen, David Davison and Ben Heaney at Archaeopress, Jonathan Kress, Peter Lape, Neal Matherne, Muiris O'Sullivan, Victor Paz, Alan Peatfield, Vince Pigott, Denise Riordan, and the late KJ Chang. I apologise if I have inadvertently forgotten anyone: as is obvious, the production of the conference and proceedings was the joint effort of many dedicated individuals.

Publication of these proceedings was funded wholly through EurASEAA14 conference fees, contributed by all paying attendees.

Introduction to this volume

This is one of two volumes comprising papers originally presented at EurASEAA14 in 2012, but updated to late 2019 for publication. This volume focuses substantially on topics under the broad themes of archaeology and art history, epigraphy, philology, historic archaeology, ethnography, ethnoarchaeology, ethnomusicology, materials studies, and long-distance trade and exchange. Because these topics are far outside my own expertise, I have relied heavily on the included authors and, where possible, referees, for advice on spellings and correct presentation of names etc., and I apologize to the authors for any remaining errors on these fronts.

Events in the Life of the Buddha: Pagan sculptures in the Hermitage collection and their context in the art of mainland Southeast Asia

Olga Deshpande and Pamela Gutman[†]

This paper examines in depth three sculptures – two unpublished – in the Hermitage Museum, Saint Petersburg, probably the most important collection of Pagan-period images outside Burma. The sculptures were taken from Pagan to Berlin in 1894, and from there to Russia in 1945. The date of the sculptures is established through stylistic analysis to the reign of Kyanzittha (1084-1113 CE), and an exploration of the shrines of the period suggests their likely provenance, the Nagayon. They depict three events in the Life of the Buddha: the Cutting of the Hair at the time of the Great Departure, the 'Mucalinda Nāga' event, and the taming of the elephant Nālāgiri. Each exhibits hitherto unrecognized iconographic peculiarities, reflecting not only eclectic Indian, especially Pala, influences, but also, in the case of the Mucalinda image, connections with Thailand and Cambodia at this period.

Introduction

The Pagan sculptures under consideration here arrived at the Hermitage after World War II in 1945, among a large group of works of Asian art from German museums. At the Institute of Southeast Asian Studies Nalanda/Srivijaya Centre/Myanmar Ministry of Culture conference held in Pagan in February 2012, 'Early Myanmar and its Global Connections', we discussed one of the images sent to Berlin in 1894, a Visnu-Garudāsana image almost certainly from the Nat Hlaung Kyaung temple, probably built during the reign of Kyanzittha. We concluded that it showed influences from both north and south India and had some affiliation with contemporary sculpture in Cambodia. In this paper the remaining three reliefs, all of which represent scenes from the Life of the Buddha, will be discussed. In 1894 these images were sent to the Berlin Museum für Völkerkunde by Fritz Noetling, the German geologist and paleontologist, a noted scholar of his time, who was in the service of the Geological Survey of India from 1886-1903. In the 1890s he was surveying the oil deposits at Yenangyaung, forty kilometers from Pagan, which he was able to visit, and became acquainted with its art and architecture. Noetling's extensive correspondence with the management of the Berlin Museum für Völkerkunde, stored in the archives of the museum, relates that between 1893-1895 he acquired a large number of Burmese art objects for the museum. These included glazed plaques and Jātaka carvings from Pagan pagodas, some stone images, reliefs and clay votive tablets. In the early years after the British annexation the government did not have any permanent representation in Pagan, and the lack of customs control over exporting works of art enabled him to take these objects to Europe. The eminent German scholar Albert Grünwedel (1897) first studied the Burmese objects and published two of the sculptures, one of which will be discussed below.

Depictions of the Life in early Indian sculpture illustrate Sanskrit versions compiled around the beginning of the first millennium: the Lalitavistara, compiled about the first century CE, the Divyāvadāna, an anthology of early texts, the Mahāvastu, which recounts the earlier lives of the Buddha and Bodhisattvas, and the Buddhacarita by Aśvaghoṣa. As to Pali texts, the most important is the Nidanakatha, an introduction to the Khuddaka Nikaya, the final part of the Sutta Pitaka, attributed to the fifth century scholar and Pali commentator Buddhaghoṣa (Malalasekera 1974: 306-307; Williams 1975: 186-187; von Hinüber 1996).

The Buddhist sculpture of Pagan was chiefly influenced by Pala art, notably by the depictions of the Life on the well-known steles illustrating the eight major events of the Buddha's Life: the Nativity at Kapalivastu, the Enlightenment at Bodhgaya, the First Sermon at Benares, the Twin Miracles at Śravastī, the Descent from Trayastrimśa at Samkāśya, the Pārileyya retreat at Vaiśali, the Nālāgiri Elephant episode at Rājagriha, and the Parinirvāṇa at Kuśinagara. Depictions of the Buddha's Life in the art of Pagan, including the images under discussion, appear to have been drawn from the Nidānakathā and the Buddhacarita, reflecting the development of Buddhism in Burma at the time (Duroiselle 1913-1914; Luce 1969-1970 I: 148-183; Stadtner 2005: 108-109). Visual elements from the Lalitavistara were also borrowed from Pala India, although there is no firm proof that this text was known in early Pagan. In Burma the earliest examples of Life episodes are found on terracotta tablets from Śrīkṣetra (Luce 1969-1970 I: 151). At Pagan, they are well-known from the so-called andagū, dolomitic stone plaques (Bautze-Picron 2006: figs 1, 19). But we are concerned here with early Pagan images depicting the events, particularly at the mid-eleventh century CE Kyaukku Onhmin and the late eleventh to early twelfth century Nagayon and Ananda temples.

The Cutting of the Hair

In terms of the Life, the earliest is the depiction of 'The Cutting of the Hair' (Figure 1), representing the culmination of the Great Departure Event. The scene appears in Indian art in fifth century CE Sārnāth reliefs (Williams 1975: figs 1, 2, 5) where Siddhartha holds the knot of his hair with his left hand and is preparing to cut it off with a sword held in the right. In these early examples Siddhartha is standing (and this is also the case at Borobudur). To our knowledge this event does not appear in Pala art. At Pagan, however, Siddhartha is always represented sitting in vajrāsana. Luce (1969-1970 I: 163-164) noted that this iconographic type – Siddhartha cutting his hair while seated – evolved at Pagan. The posture is common in Pagan art: Siddhartha sits on a pedestal without a mat or a lotus throne, the upper part of his body bare, his garment covering his hips and knees. According to the Nidānakathā, Siddhartha, in order not to waste time, cut off his hair knot together with his turban, leaving his hair undone. Thus, here the Pagan sculptor followed the Sārnāth tradition where Siddhartha had let his hair down. Such loose hair had appeared before, at the Kyaukku Ohnmin (Luce 1969-1970 III: pl. 141c) and was followed in the later Pagan sculptural tradition. As for the hair-knot, this is only found in one of two reliefs at the Ananda temple (*ibid.*: pl. 312a). A large painting on the outer wall of the north corridor in Pahtothanya temple (*ibid.*: pl. 166a) also depicts the hair-knot.

To the right of Siddhartha is the three-headed Brahma (the other head behind), with Indra to his left (Figure 2a-b). Brahma is standing frontally, with a three-pointed crown surmounted by an extremely high makuta which has much in common with those of the Nanpaya Brahma heads (Luce 1969-1970 III: pls 128-129). Indra turns slightly towards the Buddha wearing a five-pointed crown and large round earrings. Both hold what appear to be cylindrical containers. As at the Nanpaya, Brahma's feet are large and naturalistic, with long toes somewhat in the late Dvāravatī manner. A large part of the stela above Siddhartha's head is damaged and it is not clear whether here an umbrella or, more probably, the stylized crown of a tree is represented. Most of the predella relief has been damaged, but the remaining fragment has a lowered horse head together with three kneeling figures of devotees (Figure 3). The first to the right holds a bunch of lotus flowers while the last holds a lotus bud on a long stalk. The object held by the figure in the center is unclear, possibly a musical instrument. These fragments probably indicate homage to the horse Kanthaka.

Among the six Cutting of the Hair images described by Luce (1969-1970 III: pls 141c, 410c, 289c, 312a, 313c), five show Siddhartha dressed as a monk, one each from Kyaukku Ohnmin and Shwe Chaung Kubyauk-ngé (the latter now in the Pagan Museum), and three from the Ananda temple, while another from the Ananda temple has his chest bare (*ibid.*: pl. 313d). The Hermitage image also shows him without



Figure 1. The Cutting of the Hair. The State Hermitage. Sandstone. Inv. No. BD -546. H. 93 cm, W. 50 cm. Photo courtesy of The State Hermitage Museum, taken by Alexei Pahomov.

Figure 2a-b. Brahma and Indra. Details of Figure 1. Photos courtesy of The State Hermitage Museum, taken by Alexei Pahomov.



Figure 3. Relief group on the predella. Detail of Figure 1. Photo courtesy of The State Hermitage Museum, taken by Alexei Pahomov.

monk's garments. This relief is the simplest in its treatment: it shows only a possible tree-top as a hint of the context, unlike the others which have various architectural details. But on the other hand, it is the only one whose pedestal has a narrative giving the conclusion of the Great Departure story. It can be dated stylistically to the late twelfth or early thirteenth centuries CE and could have replaced a damaged original.

Mucalinda Nāga

The second image (Figure 4) depicts the Buddha protected by the serpent Mucalinda, signifying the episode which occurred during his meditation after the Enlightenment. In the sixth week the Buddha was seated under the Mucilinda (or Mucalinda) tree (Malalasekera 1974: 638-639), and the snake who was the spirit of the tree had wound his coils round him seven times and held his hood over his head to ward off the cold and other inclemency when the rainy weather continued for a whole week. The Mucalinda episode varies little in its early Pali, Sanskrit and Hybrid Sanskrit versions, and it is not possible to link it to a specific text (Gaston-Aubert 2010: 118, fn. 13). Stylistically the image appears to date to the 1090s. The arm posture, with relaxed arms and obtuse angle at the elbow, is consistent with the Ananda temple images. The double band, where the robe crosses the shins, and the pleating of the robe on the 'seat', derived directly from Pala art, is a common feature of Buddha images from this period. Another feature that suggests it dates to the period is the realistic carving of the feet and hands. The torso is slim-waisted with a full chest: there is refinement to the image, consistent with the Anawrahta/Kyanzittha period.

The Buddha sits in vajrāsana, the soles of the feet upturned, his hands in dhyānamudrā, on a single-coiled nāga throne. Three coils of the snake emerge from either side, while five conjoint nāga heads loom over his head and shoulders. Traces of red lacquer are still present on the robe, a base coat for gilding which is no longer extant. Behind the figure is a typical early Pagan nimbus, prabhāmaṇḍala, slightly pointed at the apex and extending around the shoulders and arms. The Mucalinda episode is rare in Pagan sculpture, although it occurs at Kyaukku Ohmin, which Luce (1969-1970 I: 289) dated to the mid-eleventh century, older than the Nagayon and showing northeast Indian influence, and at the Myinpyagu (Luce 1969-1970 III: pl. 152c [a misprint for 152a]) from the last quarter of the eleventh century. Bautze-Picron (2006) has illustrated an 'andagū' example in the round, found together with other small sculptures illustrating scenes from the Life. Another 'andagū' example is in the Pagan Museum, and it is found in mural paintings depicting the Life, for instance at the Maung-yon-gu (Bautze-Picron 2003: 44).

The influences for this image-type are primarily northeast Indian, although some Khmer is also noticed. The latter may have been filtered through the Khmerized art of Lopburi, itself influenced by Dvāravatī. The obvious northeast Indian prototype is an image in the round from Bodhgaya now in the Indian Museum (Sen 2007: 67, pl. 2). Both sit in vajrāsana, with the hands in dhyānamudrā. Both shoulders are covered by the uttarasanga, while the ends of the antaravasaka protrude from under the crossed ankles in the Pala/Pagan manner. There are (or were) only five nāga heads, as opposed to seven at Bodhgaya, and three coiled loops on either side of the body, as opposed to two. Gaston-Aubert (2010) suggests that the number of nāga heads was never fixed. The Buddha sits on only one coil whereas at Bodhgaya he sat on three. In any case, in this sculpture there are seven coils altogether, one on which the Buddha sits and three on either side, reflecting the story in the texts. The face, with its gently curving contours, downward-looking eyes, their shape emphasized by the upward-curving eyebrows, and with a slightly pointed uṣṇiṣa is typical of eleventh century Pagan, especially of the Nagayon temple.

The nāga heads (Figures 5-6), however, are closer to Khmer and Khmerized types of around the tenth century CE. Together they rise over to shield the body as was usual in Khmer examples, but was not a feature at Bodhgaya, and this is even more pronounced in the slightly earlier Kyaukku



Figure 4. Mucalinda Nāga. The State Hermitage. Inv. No. BD-606. H. 108 cm, D. 59 cm, W. 28 cm. Photo courtesy of The State Hermitage Museum, taken by Alexei Pahomov.



Figure 5. Detail of Figure 4. Crowned nāga head at apex. Photo courtesy of The State Hermitage Museum, taken by Alexei Pahomov.



Figure 6. Detail of Figure 4. Nāga head. Photo courtesy of The State Hermitage Museum, taken by Alexei Pahomov.

Ohmin sculpture. Under each of the heads is a rosette or lotus, typical of the Khmer Buddha under nāga examples, although in the literature this is often referred to as a solar symbol. The Khmer sculptures often carry a round object, the identification of which is uncertain: it has been variously described as a bowl, lotus bud, relic casket or myrobalan fruit (Gaston-Aubert 2010: 135). While the Hermitage example does not carry this object, the Kyaukku Ohmin sculpture and the Maung-yongu painting do.

Another feature of the Hermitage sculpture is the foliate crests on the nāga heads. This does not appear in Indian examples but is relatively common in Khmer sculpture from the tenth century and later. It appears first as a protuberance in Dvāravatī art of the tenth-eleventh centuries (Gaston-Aubert 2010: 127; Woodward 1997: 53, pl. 45, 71-72), and at Lopburi at about the same time. Woodward (*ibid.*: 72) has noted that in the mid-tenth century '...the encounter between the Dvāravatī towns and the kingdom of Cambodia was a two-way street, with Khmer stylistic elements entering Dvāravatī workshops and Buddhist subjects becoming increasingly more important in Cambodia'. The Hermitage Mucalinda combines, with the Bodhgaya iconography, elements of eleventh century Khmer and 'Khmerized' sculpture in the position and form of the hood, the foliate-crested heads and the rosette under the head, a feature which was to continue later in Khmer art. The sculptor of the Pagan example, however, appears to have also observed real-life cobras, particularly in the definition of the mouth, fangs and eyes, yet achieving an almost anthropomorphic quality.

It is interesting to reflect on the role of the nāga in Burmese belief of the time. Nāgas had a prominent place in association with the Buddha in Monument 996, an encased Pyu shrine at Pagan. Here they are partially anthropomorphic, and also have protuberances on their heads. The nāga at the apex has the foliate crest replaced by a small, uṣṇisa-like crown (Figure 5). This is also found on other minor deities at Pagan during the Kyanzittha period, namely the Garuḍa carrying Viṣṇu in the Hermitage example, and the Brahmas at the Nanpaya. It is interesting to note that while this crest appeared at Dvāravatī it was soon adapted in the art of the Khmers.

Kyanzittha was in frequent contact with Bodhgaya, the seat of the Enlightenment, where he made extensive donations and repairs in the late 1090s CE (Luce 1969-1970 I: 63). Gaston-Aubert (2010: 124) has suggested the Nāga-Buddha found at Bodhgaya may have been worshipped at the Mucalinda sanctuary near the 'dragon king' pool, as described by Xuan Zang (630s CE; *ibid.*), and it could be speculated that the Pagan Mucalinda type was developed from this. It is interesting that one of the many Kyanzittha legitimization myths, recounted in the Glass Palace Chronicle many centuries later (nineteenth century) has the young Kyanzittha, after King Sawlu had taken his worldly goods, forced to find a place to sleep '...and while he slept a young Nāga came and watched over him. At this place, when he became a king, he built the Nagayon pagoda' (Gaston-Aubert 2010; Pe Maung Tin and Luce 1923: 108). Nagayon means 'overspread by a serpent'. As in many other instances, Kyanzittha's hagiography was designed to identify him with the Buddha.

We know little about relations between Pagan and Angkor in the eleventh and twelfth centuries, although they were to increase in later years. What is apparent, however, is that the Khmers were developing a Buddha-Nāga image-type from around the mid-tenth century, initially drawing their inspiration from Dvāravatī, and that as their influence over northeast Thailand increased the Khmerized type was widely accepted. The lotuses under the heads of the nāgas in the Khmerized type were adapted at Pagan and appear on the Hermitage Mucalinda (Figures 5-6). But in the Khmer lands the type became connected with the transformative power of the serpent and connected with Cambodia's cultural hegemony (Woodward 2005: 138-139), while in early and later Pagan sculpture its rare appearances definitely depict the events of the Sixth Week after the Enlightenment.

The Taming of the elephant Nālāgiri

The third image depicts the Taming of the elephant Nālāgiri, published by Grünwedel in 1897, soon after its acquisition from Noetling (Figure 7). Despite having access to Grünwedel's paper, Luce (1969-1970) did not mention this sculpture in his description of the Nagayon. Grünwedel noted that it had come from the Nagayon and remarked on its high artistic achievement. It illustrates the event at Rajagrha, the Magadha capital, when the enraged elephant Nālāgiri was sent by the Buddha's jealous cousin Devadatta to kill the Buddha. But the elephant, pacified by the Buddha's loving kindness, kneeled before him, and was stroked by his hand. Grünwedel (1897: 130) was of the opinion that this relief was made of gilded marble. However, marble was not used in Pagan, and Hermitage restorers have confirmed that the relief is made of limestone which had at some point been lacquered and gilded. The gilding has disappeared almost completely, leaving a chocolate-colored base, the lacquer undercoat which permitted the gilding to adhere to the stone.

The Buddha is standing on an indented pedestal in a frontal pose, with a plain pointed arch behind. This plain background differs from similar reliefs at the Ananda temple, where a shrine or a palace are depicted behind the Buddha (Luce 1969-1970 III: pls 312c, 319e). The left hand holds the robe at chest level; the right is lowered along the body. The elephant kneels near the Buddha's right foot, supposedly being stroked by him. However, the distance between the elephant and the hand is too great for this purpose, and the hand simply hangs down. The Buddha is flanked by two monks standing in identical poses, the only difference being that their heads are tilted in opposite directions.

The Buddha, with an elongated stylized body, a smallish head and a rather short neck, is dressed in the 'open mode'. The image shows the typical features of late eleventh-early twelfth century images: full hips, rounded upper thighs, narrow waist with slight stomach bulge and full pursed lips (Strachan 1994: 69-70). The unevenness of the bottom edge of the robe suggests that the Buddha is walking (Luce 1969-1970 I: 143; Brown 1990: 99): this is also seen in the Ananda image (Luce 1969-1970 III: pl. 312c).

The image has a double nimbus, prabhamandala, the inner around the head with triangular projections from the shoulders, symbolizing the Buddha's radiance, the outer surrounding the body. Some earlier sculptures from Śrīkṣetra and Dhanyawadi also featured a plain nimbus around the body (Luce 1985: pls 12c, 21b, 62f; Gutman 2001: figs 20-21). This occurs elsewhere at the Nagayon (Luce 1969-1970 III: pl. 202c). The Buddha's body

Figure 7. Taming of the elephant Nālāgiri. The State Hermitage. Sandstone. Inv. No. BD-576. H. 118.5 cm, W. 57 cm. Photo courtesy of The State Hermitage Museum, taken by Alexei Pahomov.





Figure 8 a-b. Monk's khakkhara. Details of Figure 7. Photo courtesy of The State Hermitage Museum, taken by Alexei Pahomov.

is much taller than those of the monks, emphasizing his importance; in relation to the Nālāgiri reliefs from the Ananda, Duroiselle (1913-1914: 95-96) considered this feature to be absurd. holding that the monks on either side were perceived as pygmies, and the elephant as a rat under his feet. This presentation merely suggests the narrative. This concise manner of representation has been adopted from Pala art, although in earlier Indian art one can find various interpretations, at times fully descriptive and emotive.

The device of two elephants, enraged and pacified, appears at Āmāravatī (Snellgrove 1978: 79, fig. 49) and was adopted at Sārnāth, where they are placed in front of the standing Buddha, one over the other (Foucher 1900: fig. 30). In the Sārnāth reliefs mentioned by Williams (1975: 184) the kneeling elephant is to the right of the standing Buddha and a monk with a staff is to his left, and as such the subject became common in the post-Gupta period (Williams 1975). One of the earliest Nālāgiri images of the Pala period, dating to *c.* 820-830 CE, gives an interpretation consistent with Xuan Zang's description of many Rājagṛha images: from each finger of the Buddha hand stretched to the elephant, a lion issues out '...as a sign of the leonine power of Sakya-simha' (Kramrisch 1940: 111; Foucher 1900: 168, 170, pl. X, 5). It seems that this emphasis on the power of the Buddha appears only in the Pala period, although at the same time compositions with one elephant and no lions also appear.

We have already mentioned the Pala reliefs with the eight major events of the Life. A revered image in Thailand, the P'ra Silā or 'stone Buddha' at Wat Chieng Mān in Chiang Mai, venerated for its rain-making ability, is a tenth century Nālāgiri image from Bihar (Lohuizen-de Leeuw 1961). It is this abbreviated treatment that was assimilated in the hieratic art of Pagan, Burma, where it developed further. The Nālāgiri theme was favored in old Burmese art (Luce 1969-1970 I: 179). The earliest depictions show only one monk next to the Buddha. That two monks became the norm is continued later in the sculpture of Pegu, where two monks appear on either side of the Buddha, with an elephant kneeling at his right (*ibid.*: 179-180). When the 'two-headed elephant' appears for the first time in Burmese art, one head is lifted upwards, as if reflecting its initial aggression, and the second is bent to the Buddha's feet. At Pegu there were also two elephants: one on the right and the other on the left of the Buddha. The important relief from the Nagawun Thein in Pegu has the elephant to the left of the Buddha. Luce (1985 I: 168) described it as a '(tall) pointed sandstone of the haloed Buddha with elaborate reredos, wheel, prāsāda, apex and in flat relief. He stands high in bold relief, between two frightened monks, the one on the left with the alms bowl hiding behind the Buddha, the one on the right (head lost) kneeling in terror at the Buddha's feet. Immediately in front of them the drunken Nālāgiri elephant mounts to the attack, and then slumps below the Buddha's feet'. He opined that 'with all its damage and disproportion, this is still the finest carving of this subject in Burma' (Luce 1969-1970 I: 179), and it raises important questions about later Mon art which are not possible to go into in this discussion.

During the Pagan period this episode was popular both in sculpture and painting. Luce (1969-1970 III: pls 141f, 312c, 319c, 410f) recorded four sculptural examples: one from the Kyaukku Ohnmin, two from the Ananda temple and another in the Archaeological Museum. The Hermitage relief therefore becomes the fifth example. Of the five, only the one from the Ananda temple depicts the 'two-headed elephant' (*ibid.*: pl. 319c). And here, too, we can see a hint to the Buddha's movement in the treatment of the robe's folds. Luce (*ibid.* I: 180) held that 'the most impressive is the Kyaukku relief, where the Buddha stands immensely tall, large and confident between his slim, long-eared and tiny-headed monks, bearing bowls and fly-whisks – without rapport, physical or spiritual, with the poor drunken beast so far beneath them.' To our mind, the Hermitage Nālāgiri, which stands, both chronologically and stylistically, in between the Kyaukku and Ananda reliefs, is probably not so impressive as that, but is very attractive indeed.

The monks at Pagan hold an alms bowl either in both hands or in one hand, usually the right, with another object in the left. In the Hermitage example we see bowls in the right hands and long thin poles with a circular finial in the left (Figure 8a-b). In other Pagan examples sharp triangular finials resemble an arrow-head (Oshegova and Oshegov 1988: 92, 98). Luce (1969-1970 I: 180) considered such objects to be fly-whisks, but Grünwedel (1897: 139) identified these as khakkhara, monastic staffs with bronze finials of various forms. Revire (2011: fig. 6.7), in his extensive examination of the subject, illustrates a similar finial discovered in 1940 in Thailand during the excavation of Chedi Chula Pathom. This has a slightly different form, a metal bow shaped like a heart or a bodhi leaf into which six smaller rings were originally inserted. He also illustrates (ibid.: fig. 29) a boundary sema stone from Khon Kaen National Museum with a relief depicting a monk with a khakkhara having precisely the same finial as that in the Hermitage relief. He noted that the Buddha is said to have told his disciples that '...they should keep a staff topped by pewter because all the Buddhas of the past, present and future have kept and will keep such a staff (*ibid.*: 6), and that both Xuan Zang and Yijing observed similar staffs in India where they had at that time a practical role – to keep cows or dogs away while collecting alms in the village. The khakkhara held by the monk suggests influence from northern India, as examples of these subjects are absent in the art of southern India and Sri Lanka (Grünwedel 1897: 130; Revire 2011: 7). Similar staffs have been found from Japan to Java, and their numerous artistic reproductions can be found in various countries (Revire 2015: 189-195), though in Indian art itself only a few examples have survived. Indeed, the Sārnāth Nālāgiri relief mentioned above (Williams 1975: fig. 3), where a long khakkhara is held by a monk to the left of the Buddha, may be the earliest example in Indian art. In Pagan art we find both types of khakkhara finials: round and in the form of a heart or a bodhi leaf.

Placement

Any attempt to establish the original positions of the Hermitage sculptures within the Nagayon is fraught with difficulty. Not all the sculptures in the hall are original, some having been replaced as early as the late twelfth to early thirteenth centuries after some incident, possibly an earthquake. Others, for instance the Request of Sahampati relief, date to the Ava period, and the shrine itself was completely refurbished during the Konbaung period or earlier (Stadtner 2005: 180). Luce's (1969-1970 I, III: 313, pls 193 a-d, 194 a-e) list of the Life episodes compiled in the late 1950s does not conform to their present disposition. The sculptures were removed to the Pagan Museum in the late 1980s and replaced with gypsum replicas, with no apparent reference to the texts. Given the Nagayon's proximity in time to the Ananda, as many of the reliefs conform to each other in terms of their placement, we might refer to the arrangement of the sculptures there.

Of the ten niches in the Nagayon entrance hall, nine are occupied with Life scenes. One niche is empty. Luce (1969-1970 I: 313), starting from the north wall, north-west corner listed: the First Sermon; the Pārileyyaka retreat; the launching of the golden bowl; the defeat of the heretics at Savatthi; the Descent



Figure 9. Placement of the Life scenes inside the Nagayon Hall, after the hall plan in Strachan (1994: 62).

from Tāvatimsa; Parinirvāṇa; the Conception (Maya's dream); the Buddha in dhyānamudrā, the request of Sahampati and the Brahmās; an empty niche; the Buddha in vajrāsana under the Bodhi tree; Brahma with chattra, Indra with conch (Figure 9). In February 2012, during the visit of both of us to Pagan, it turned out that the order had once again changed, and the empty niche is now first to the left of the entrance, on the western wall.

There are five pairs of images inside the hall. The Conception and the Parinirvāṇa, being larger than the rest, remain in their original positions. The Descent from Tāvatiṁsa on the east wall should correspond to the Nālāgiri episode on the western wall. However, even according to Luce's list the empty niche is out of place in relation to the Descent. While the 1980s copies of the Conception and the Parinirvana, by virtue of their larger size, were returned to their correct positions, others were placed without any internal logic. It appears that apart from the two larger reliefs, the others could have changed their place several times. Therefore, it is impossible today to restore the initial arrangement of the Life scenes inside the hall. Nevertheless, the size of the hall niches is $125 \times 75 \times 55$ cm and the sizes of the images *c*. 118 x 57 x 28 cm. Thus, the Hermitage Nālāgiri concerned would fit exactly. The Cutting of the Hair scene, of similar size, could also have been placed in the ambulatory gallery at some point after the Conception.

Stadtner (2013: 183) has suggested that the five niches on the west and north walls following the depiction of the Enlightenment may be connected to some of the Events associated with the Seven Weeks, the only one missing being the Sixth Week. It is therefore highly probable that Noetling procured the Mucalinda image from there.

Conclusion

It would appear that all three Hermitage sculptures originated at the Nagayon. Further research in the Berlin archives may clarify this. Given the history of the sculptures there, however, we can only speculate as to their original placement. Certainly, the Mucalinda and Nālāgiri events belong to Kyanzittha's reign, while the Hair-cutting episode may be somewhat later.

That Kyanzittha built the Nagayon is well-attested. The Life sculptures of the Nagayon on the whole belong to his early reign, a time when Kyanzittha was developing Buddhism as the state religion with himself at the center. His monks and emissaries were visiting India, especially the site of the Enlightenment. But they were also reaching out to other Buddhist centers to the east, to Khmerized Thailand and even as far as Angkor. With only basic knowledge of mudrās and of the Eight Scenes, Kyanzittha's sculptors were called upon to create new representations of the Events, an extended iconography of the texts they had to hand.

Acknowledgments

The authors would like to thank Claudine Bautze-Picron, Charlotte Galloway and Don Stadtner for their advice in the preparation of this paper. All photographs in this paper were taken by Hermitage photographer Alexei Pahomov.

A note on two peculiar stone pedestals in the form of atlas dwarfish figures (yakṣas)

Valérie Zaleski

Introduction

Two carrying *yakṣas* are known to come from Wat Na Phra Men in Ayuthayā (Figure 1a-e), one preserved in the Chao Sam Phrayā National Museum in Ayuthayā (5/6CH), and one preserved in the National Museum of History in Hanoi (LSb.19838, former D 311.62: cf. Marchal 1939), which was brought to my attention by William Southworth. Both have approximately the same height and may appear from a technical and archaeological point of view, as much as from an iconographical aspect, as clues to the symbolic role played by these beings in the art of Dvāravatī. This kind of atlantes, quite common in Mōn architecture, is nevertheless peculiar in Mōn sculpture, especially as individual pieces. Considering the flatness of their backs, they were doubtless leaning against something, and seem most probably to have stood as parts of a pedestal of a monumental image; they would then have been parted from this pedestal, either because they were sculpted separately, or by intentional cutting.











Figure 1a-e. (left to right) Atlante yakṣas from Wat Na Phra Men, Ayuthayā: a, d, e in Chanthara Kasem Museum, courtesy T. Ollivier; b, c in National Museum of History, Hanoi, courtesy W. Southworth.

A puzzling issue might come from the review Claeys made of the remains he could observe in Ayuthayā. He noted that the Wat Na Phra Men was of particular interest because it contained, apart from the sculptures preserved in the Chantharakasem National Museum, many other notable sculptures and ablution basins, including the huge Buddha in the Wihān Noi and a standing Buddha, all from Dvāravatī, three Lopburī and early Ayuthayā style sculptures. It appears to be an early conservatory of Buddhist sculpture. Claeys observed that the feet of the throne of the huge Dvāravatī style bhadrāsana Buddha image were supported by two bearing *yakṣas* (Claeys 1931: 397, pl. LII B). The picture published therein shows only one, which resembles the *yakṣa* preserved in the National Museum of History in Hanoi, though it is not possible to be sure that it is the same one. Accordingly, as a separate piece of sculpture, it is impossible to confirm whether or not this bearing *yakṣa* might have been placed against the throne of that *bhadrāsana* Buddha image.

In attempting to find out which kind of image these *yakṣas* might have been associated with, it appears that the closest examples arise from the Ayuthayā kingdom, on images depicting the *Māradharsana* or Māra's Assault. Distant as they may be those images offer the closest parallels with the Wat Na Phra Men *yakṣas*. Could there have been some connection between those similar but distant figures?

The two carrying yaksas from Wat Na Phra Men in Ayuthayā as parts of Māra's Assault episode

Could the carrying *yakṣas* from Wat Na Phra Men have been supports for a standing Buddha image, as seen with other similar Dvāravatī-style bearing figures, such as Panasbatī or Sūrya? Each one could have been a support for a standing Buddha image, but this image would then have been too small to respect the necessary difference in scale between a Buddha image and an accessory being such as a *yakṣa*. There are other Dvāravatī-style bearing figures which appear larger than the Buddha, such as the Sūrya supporting the Buddha between two assistants from Nakhon Pathom (641/2519 in the Phra Pathom Chedi National Museum) (Figure 2), but those bearing figures, known only on steles in high relief, may be considered as *vahanas* or divine beings of a high rank, rather than minor divinities. Furthermore, all the Dvāravatī standing Buddha images in stone have been found connected to their lotus pedestal, or at least none has been found with its feet but without a pedestal. This would seem to rule out the hypothesis that these *yakṣas* could have borne a standing Buddha image.

Alternately, the carrying *yakṣas* from Wat Na Phra Men could be parts of a dismantled and maybe dispersed huge image. The softness and delicacy of the modeling, particularly noticeable in the face, torso, shoulders, and the remnant foot of the squatting *yakṣa* with hands resting on his knees, resembles the soft modeling of some of the most prominent stone images in Dvāravatī art, such as the huge *bhadrāsana* Buddha images (seated in the so-called 'Western fashion') from Wat Phra Men in Nakhorn Pathom.

The lotus pedestal, without stamens and with inverted petals (or more precisely sepals), with only the fleshy 'inside' visible and well differentiated from the upward petals, also looks similar to some Dvāravatī style images (such as the Buddha on Panasbati from Khok Samrong or the standing Buddha from Wat Na Phra Men in Ayuthayā, respectively ThV23 and ThV6 in the Bangkok National Museum), and specifically to the huge ones from Wat Phra Men in Nakhon Pathom (Figures 3-4).

As we know that those huge statues were made in several assembled pieces and transported to Ayuthayā, and sometimes broken and scattered – the ones from Wat Phra Men in Nakhorn Pathom were transported to Wat Phayā Kong, then to Wat Khun Phrom in Ayuthayā; the later one now in the *Wihān Noi* of Wat Na Phra Men in Ayuthayā was first brought to Wat Mahāthāt, before being transferred to Wat Na Phra Men in the third reign (Dupont 1959: 43-46; Dhanit Yupho 1967: 4-6, 10-15) – we may presume they might have been dismantled or even cut up to enable their transportation from Nakhon Pathom



Figure 2. Sūrya supporting the Buddha from Nakhon Pathom Phra Pathom Chedi National Museum; courtesy T. Ollivier.



Figure 3. Lotus pedestal of the huge bhadrāsana Buddha image from Wat Phra Men in Nakhon Pathom, in Bangkok National Museum. Photo: V. Zaleski.

to Ayuthayā. The conjecture of the dismantling and dispersal of these statues before their moving has been confirmed by the fact that one piece belonging most probably to the upper strut from the back of the throne of the image in the *wihān* of Wat Na Phra Men in Ayuthayā (Figures 5 and 6; 626-2519 in the Phra Pathom Chedi National Museum) was found in the Nakhon Pathom excavations (Claeys 1931: 396, pl. LI d; Dupont 1959: 270; Sakchai Saisingh 2004: 196-199; Fine Arts Department 2005: 86-87). It is interesting to note that among the peaceful reigns reputed by the sources to have been wealthy, and marked by the collecting of old images and the building of palaces and monasteries, the reigns of Rāmāthibodī I (1491-1529) have been





Figure 4. Lotus pedestal of the standing Buddha from Wat Na Phra Men, Ayuthayā, Bangkok National Museum. Courtesy T. Ollivier (top); detail of Figure 3 (center and bottom): lotus pedestal borne by the yakṣa from Wat Na Phra Men, Ayuthayā, National Museum of History, Hanoi, courtesy W. Southworth.



Figure 5. Buddha image in the Wihān Noi of Wat Na Phra Men in Ayuthayā. Photo: V. Zaleski.

surmised as the ones when these images could have been transferred, with the exception of the reign of Rāmesuan (1388-1394) for the moving of the later image to Wat Mahathāt (Dhanit Yupho 1967: 14-15). This period for the transportation of such huge statues would fit with the period when Māravijaya Buddha images with *yakṣas* from Māra's army were favored.

If we consider the fact that some huge heads have been preserved, it appears that some other huge images of the Buddha may have existed and been accompanied by subsidiary figures which could have been separated from the main image, either because this image would have been broken, become obsolete, or even have been dismantled and hidden to be kept safe, for instance during the sacking of Ayuthayā (Dhanit Yupho 1967: 13-14).

Could the *yakṣas* from Wat Na Phra Men have been parts of a sitting Buddha image, maybe as elements of the Vajrāsana at the moment of Māra's Assault? Several Buddha stone heads have a size consistent with a sitting Buddha image whose height would have ranged roughly between 80-100 centimeters, the high end of the range supposing an elongated



Figure 6. Piece of the upper strut from the back of the throne of the image in the Wihān Noi of Wat Na Phra Men in Ayuthayā (Phra Pathom Chedi National Museum), courtesy: T. Ollivier.

image, such as the one from Buriram in the National Museum of Bangkok (Figure 7; 63/2510) and with *yakṣas* of 48 centimeters in height (e.g. in the National Museum in Bangkok and in the Chantharakasem Museum in Ayuthayā, including one from Phraya Boran Ratchatanin collection 115 WCh/2519, apparently made in the same stone as that of the Wat Na Phra Men *yakṣas*). This would suggest that the *yakṣas* from Wat Na Phra Men may have been parts of one (or two) throne(s) of a sitting Buddha image, and may be elements of the Vajrāsana at the moment of Māra's Assault. This would be supported by subsequent representations from the fourteenth-sixteenth centuries AD showing *yakṣas* other than on a photograph, I am not able to determine with certainty whether or not the stone is the same.

Among these, the images from Ayuthayā in stone (on the reverse side of the *buddhapāda* in Wat Phra Rup in Suphanburī) (Figure 8), in stucco (on the *prāng* of Wat Phra Prāng in Singhburī and in the Somdet Phra Narai National Museum) (Figures 9 and 10), and in bronze (Figure 11) are the most significant. Several bronze examples, including one from the *prāng* of Wat Phra Prāng in Singhburī, are preserved in the Walters Art Gallery, the National Museum in Bangkok (AY15 and AY17), and the Chao Sam Phrayā Museum in Ayuthayā (17/1Ch) (Woodward 1997: 231-232, 243, 246). It is noteworthy that on one of these examples, showing Māra's army conquering on one side and defeated on the other, an influence from the late fifteenth century Mōn style from Pegu has been traced, and particularly from Dhammaceti's reign, when four Buddha images with *yakṣas* from Māra's army were founded (*ibid.*: 231).

Some other examples of bearing *yakṣas* in the round providing close parallels to those from Wat Na Phra Men include wooden ones from the Asuka period in Japan, and from the sixth to early seventh century Mogao caves in Dunhuang (Figure 12; Feugère 1993), now very isolated but showing similarities with some *yakṣas* from Gandhāra (Gairola 1956: 140 E, 141 fig. 6). We may infer that these *yakṣas* served as supports to another element as the tops of their skulls are cut off. Moreover, as the Dunhuang example has a tenon, these atlantes provide further evidence that such figures were associated with larger images, and most probably to Marāvijaya Buddha, as their fierce expression shows them as *yaksas* of

Māra's army. Furthermore, it proves that such images were well known long before the Ayuthayā period, when they were common, that is as soon as the seventh century AD.

We might argue that the wooden yaksas may have completed a large wooden Māravijaya Buddha image which was burnt or destroyed, but a large stone Buddha image would not have disappeared so easily. Besides, Māravijaya Buddha in *bhūmisparśamudrā* are quite uncommon in the Dvāravatī area where, apart from some votive tablets from Lamphūn in the Hariphuñchai National Museum (e.g. the early 1/2549 and the later pala style 913/2518) and an unusual one from Nadun (Mayurie Veraprasert 1995: 223, No. 7), only a very few large examples in stone performing this *mudrā* are known. Among these are the two similar images from Buriram (63/2510 in the National Museum in Bangkok) and in the Phimai National Museum, plus a Māravijaya Buddha under the Bodhi Tree (Dupont 1959: 128, No. 480). As those images are in pieces, and as many remaining heads prove that some images have been broken, we may speculate on the probability that a large Māravijaya Buddha image in bhūmisparśamudrā did indeed exist in Dvāravati.



Figure 7. Buddha Māravijaya from Buriram, Bangkok National Museum, courtesy T. Ollivier.



Figure 8. Reverse side of the buddhapāda in Wat Phra Rup in Suphanburī (Naengnoi Punjabhan 1992: 101).



Figure 9. Māravijaya Buddha, Wat Phra Prāng, Singhburī. Photo: V. Zaleski.

From an early date in Indian art and following the prescriptions in texts, *yaksas* are represented with Māra while he is assailing the Bodhisattva, even though they sometimes accompany him in other events, for instance in Sāñcī and Nāgārjunakonda (Longhurst 1938: pl. XIVb; Agrawala 1995: 128, fig. 7). Māra's Assault is thus the event in the Buddha life with which yaksas from Māra's army are the most readily associated. Generally depicted in this episode as demonic beings, but not as bearers (Lahore Museum N.G-78, 538, 543; Ingholt 1957: figs 63, 66; Barthoux 1930: pl. 99-103; Zwalf 1985: 101, No. 134), and sometimes situated underneath the Buddha's throne but not as dwarfish figures (Coomaraswamy 1923: 58, pl. 17; Majumdar 1937: 46, No. 47), yaksas from Māra's army seem to appear first as dwarfish figures under the Buddha's throne on some Amarāvatīstyle panels (Burgess 1887: pl. XXXI, 6; Longhurst 1938: pl. XXVII c, XXIX a), where they sometimes even bear the throne (Barrett 1954: pl. VIII a; Burgess 1887: pl. XLI). From the Gupta period, as on the Vajrasāna from Bodhgayā (Malandra 1988: 12), and especially in Bihar, they appear associated with other figures

embodying royal symbolism of the throne (lions, elephants), and attest to their symbolic role in the Māravijaya Buddha images (Banerji 1933: 61; Spooner 1924: 77, pl. XXIXa).

Tracing the two yakṣas from Wat Na Phra Men as clues to the origin of the Ayuthayā Earth Goddess wringing her hair in Māra's Assault

Referring to Marāvijaya Buddha images from Ayuthayā where the central *yakṣa* bears on his head a lotus pedestal, sometimes with a mortise and other times with an image of Nāng Thoranī separately assembled, the hypothesis has arisen that the atlante *yakṣa* pedestals from Wat Na Phra Men could have supported other figures from the Māra's Assault episode, such as an isolated image of the Earth Goddess Vasundhārā (Pṛthivī). The issue would then be to determine whether or not the two *yakṣa* pedestals from Wat Na Phra Men could have been parts of the same set or represent two different ones, and whether they could have borne figures or not.

One could argue that the Wat Na Phra Men *yakṣas* might merely represent telluric and auspicious deities of wealth as is often seen in the Indian context, and may have been used as pedestals for offerings (noted



Figure 10. Buddha, Somdet Phra Narai National Museum, and detail (right). Photos: V. Zaleski.



Figure 11. Buddha Māravijaya, Bangkok National Museum, fourteenth-sixteenth century (probably fifteenth century). Photo: V. Zaleski.

by Marion Frenger, personal communication, 2012), or, as with the pedestal of the Yakushi triad in the Yakushiji monastery in Nara (founded in 697), may have been supports to the world axis as symbolized by the throne of the Buddha (Coomaraswamy 1935: 52-54, pl. XIV, fig. 41).

The two pedestals, probably made of the same stone, are approximately the same size and both appear to have leaned against something. But through their position, as well as from a stylistic point of view, they appear somehow different. The one in the Chao Sam Phrayā Museum looks much more 'Dvāravatī mōn' in style than the one in the Hanoi National History Museum, which does not have the same fleshy quality, and is not as stocky, with a smaller belly. This is particularly noticeable in the treatment of the torso and of the face, which look modeled with less sensitivity, and which are more mechanically treated, especially in the eyes, the eyebrows and the mouth, with its corners deeply marked.

On the other hand, these differences might merely be due to a difference in hierarchy or situation. The slight skewness of the Hanoi example, and the better rendering of its right leg compared to the Ayuthayā one, which is symmetrical and with legs

not as well rendered (actually, one is not visible due to the presence of stucco), fits with other examples of three elements. The two *yakṣas* might have been part of a set in which a third element would be required (the one observed by Jean-Yves Claeys, as noted above – if it is indeed another example and the Hanoi Museum one), as in the several examples from Ayuthayā. The central element was intended to be seen frontally, while the other two would have been intended to be seen from the sides. The conjecture

that the *yakṣa* pedestals would have been reused or that at least the 'central' one would have been reused while the other one(s), maybe the 'side' one(s), would have been added somehow later on, either to the same set, or to fit the pedestal of another Buddha image, might explain the similarities, but also the differences in style, and the quite rougher aspect of the supposed later one. The hypothesis of a reuse of a *yakṣa* or of the addition of lateral *yakṣa* images may be supported by the fact that the huge bhadrāsana Buddha in the Wihān Noi of Wat Na Phra Men in Ayuthayā was re-carved (Luang Boribal Buribhand 2490 (1947); Dupont 1959: 276-277; Dhanit Yupho 1967: 8; Boisselier 1965: 140; 1974: 81).

That each would have supported an independent figure is a question which remains conjectural. The lack of any tenon would go against such a hypothesis. But the presence of traces of stucco on the supposed central *yakṣa*, and especially on its sides and pedestal, indicates that it was either attached to something else, or reused and probably coated with stucco, which would suggest that another piece might have been added and maybe secured, initially or later with stucco.



Figure 12. Atlante yakṣa from Mogao Caves in Dunhuang, sixth to seventh century, courtesy Musée Guimet.

The fact that there are two similar *yakṣas*, if they were indeed parts of one image as we suppose, would make less probable their use as pedestals for offerings. They would then have been supports to something else: inferring from the Ayuthayā examples, the figures associated with the pedestal of a Māravijaya Buddha image could have been either the Earth Goddess alone, or both the Earth Goddess and Māra on Girimekhala. Though much later, the examples from Ayuthayā thus provide an end stage for the depiction of the Māravijaya Episode in the round, almost as complex as the Khmer representations of it in relief (Figures 13 and 14). But compared to those reliefs, the issue is, for the Siamese sculptures, the emphasis on the bearing *yakṣas* which appear to be inherited from a Mōn tradition, due to the particular importance of *gaṇas* and *yakṣas* as known from Mōn remains, or at least from a tradition known *at the time of* the Māravijaya Episode depiction in the round appears to be a tenable hypothesis. The question then arises whether or not these *yaksas* might have supported the same deities as in Ayuthayā.

The association of the Earth Goddess with bearing yakṣas during Māra's Assault

In Indian art, the association of the Earth goddess with the Buddha Māravijaya in *bhūmisparśamudrā* appears during the Kuṣāṇa period on some reliefs from Gandhāra (Burgess 1900: 38, pl. 18; Cousens 1914: 87, note 1 from the editor; Lyons and Ingholt 1971: 65, No. 62; 148, No. 346; Qagliotti 1991-1992: 80-81, figs 18, 20), but becomes more common on Sārnāth reliefs in the Gupta Period (Banerji 1933: 14-15, 58-60; Leoshko 1988b: 41-42; Agrawala 1939: 17), where she is sometimes borne on a lotus blossom (Guthrie 2004: 23).

She is eventually widely represented in Pāla-Sena art when the Māravijaya becomes dominant (Banerji 1933: pl. XXb, XXc; Cœdès 1959: 10; Bautze-Picron 1991/92: 261-262), especially in Bihar (at Nālandā and Bodhgayā), where she is found alone or with another aspect of the earth deity Aparājitā (Banerji 1933: pl. XXVc; Bénisti 1981: 35, 44, fig. 80; Leoshko 1988a: 96-97; 1988b: 48-50; Bautze-Picron 1995/96: 373-374; Bhattacharyya 2001: 78, No. 52), and most often holding a pot, although this peculiarity is absent from the Indian sources and can only be found in Chinese translations (Guthrie 2004: 24). But she never seems to be supported by *yakṣas*.



Figure 13. Post-Bayon style stele from the Thousand Buddhas Gallery in Angkor Vat. From Lucien Fournereau, courtesy Musée Guimet, AP 11999.

However, as *yakṣas* are closely associated with the Indian guardian deity of the Earth (e.g. in some examples from Burma; Duroiselle 1924: 144; Guillon 1987: 143), and as most of the Indian supporting *yakṣas* on the pedestal of a unique Buddha image are associated with representations of Māra's Assault, while some representations of the Māravijaya Buddha show the Earth Goddess with bearing *yakṣas*, the hypothesis that the Wat Na Phra Men bearing *yakṣas* could have been a support to an Earth Deity from Māra's Assault is indeed possible. The two lotus buds held by the *yakṣas* appear to be one more clue to their function as being a support to Pṛthivī, while their benign aspect is a Dvāravatī style peculiarity.

Hence, I have searched for older visual representations associating bearing *yakṣas* and the Earth Goddess in the Māravijaya episode to support the possible function of the Dunhuang and Wat Na Phra Men *yakṣas*. A stele in the British Museum (OA 1880-11) from the sixth or seventh century AD, and supposedly coming from Sārnāth, shows Māra's Assault in a very simplified way, with the Buddha surrounded by Māra

with his bow, one of his daughters and two demons, while beings are supporting the ground on which the Bodhisattva is sitting. Those atlantes, though quite dilapidated, appear to be *yakṣas*, supporting the rocky ground which might symbolize here the Earth goddess emerging and shaking to bear witness (Zwalf 1985: 99, N.132).

More explicitly, the Earth Goddess appears together with *yakṣas* on the upper level of the first gallery of Borobudur. While this relief has been identified as an illustration from the Lalitavisatara, there she is holding a pot (Krom 1974: 102-104, fig. 94; Naudou 1973: 119). A much later example from Bagan (Stadtner 1999: 59, fig. 7) is interesting, as it shows on the pedestal of the Māravijaya Buddha, between elephants and lions, the kneeling Earth Goddess presenting a vase and touched by the hand of the Buddha, and a *yakṣa* centrally situated supporting the throne of the Buddha. Though the two figures are not organically linked (the *yakṣa* being not supporting the Earth, unless we consider the notched structure of the throne as rocks), they are nevertheless associated. But no image of the Earth Goddess Vasundhārā (Pṛthivī / Brah Dharanī / Nāng Thoranī) either in *añjalimudrā* or presenting a vase (as in the Indian tradition) and borne



Figure 14. Eastern pediment from Sanctuary 1 of Vat Nokor. From Fournereau (1890: 71); courtesy Musée Guimet, AP 12041.

by a *yakṣa* has been found. Could the bearing *yakṣas* from Dvāravatī, if ever associated with the Earth Goddess in Māra's Assault, have supported an image of the Earth Goddess wringing her hair to bear witness, as in the examples from Ayuthayā? This would be another clue to support the hypothesis of an early existence or even a Mōn origin to this iconography in Southeast Asia.

The atlante yakṣas from Wat Na Phra Men as possible supports to the peculiar Southeast Asian aspect of the Earth Goddess Vasundharā wringing her hair to bear witness

The iconography of the Earth Goddess Vasundharā wringing her hair to bear witness in Māravijaya Episode has not been traced in India, either in written sources reporting the Māravijaya as Mahāvastu, Lalitavistara (De Foucaux 1988: 272), Buddhacarita, the Mūlasarvāstivādin Vinaya or the pāli Nidānakathā (Jayawickrama 1990: 98), or in any visual representation. Guthrie (2004: 67-71) noted several versions of the Māravijaya episode in Chinese translations with the mention of an Earth Goddess sprinkling Māra. In Southeast Asia, however, this aspect of the goddess is formalized in a text, the Paṭhamasambodhi (Cœdès 1919: 118-122, 1968a: 223-225; Filliozat 2003; for other modern manuscripts see EFEO DATA 510 Pathamasambodhi Cœdès), with its earliest extant manuscripts written in Pāli, and coming from Lān Nā (Wat Lai Hin in Lampang) (von Hinüber 1996: 180 § No. 391; Guthrie 2004: 86). A Southeast Asian origin has long been proposed (Leclère 1906: 52-53; Duroiselle 1924: 144; Guillon 1985: 25-26, 1987: 143; Guthrie 2004: 25-26 also stresses the existence of a similar tradition in Kizil, particularly with an image of a male Earth Deity wringing his hair in the Māyā cave). A Sinhalese source has been dismissed (Guthrie 2004: 74-75, 84-85), as the Earth Goddess Vasundharā wringing her hair can be found in Southeast Asia before Sinhalese Buddhism became dominant there, and as Sinhalese Buddhist art has not preserved the habit of representing the Earth Goddess wringing her hair (Gatellier 1983: 58-59, 1991 1: 181, 1991 2: 91).

A Southeast Asian origin to the Earth Goddess wringing her hair has been considered quite likely, especially as, despite the rejection of this iconography as being non-canonical, it has been preserved up to now (Guthrie 2004), even with independent images in the round (Fournereau 1895: pl. XXX; Duroiselle 1924: 146; Gangoly 1943: fig. 7; Bowie 1960: 162, fig. 147; Giteau 1965: 153, 159, pl. 19; Raymond 1998: 116-112), attesting to the existence of a presumably long-living tradition to such depictions. While some of these were meant to be placed on the platform of the main Buddha image together with other independent images, others appear to be a part of a larger image, rather than a part of a set. On the other hand, it has been proved that the Paṭhamasambodhi shows elements not found in the Pāli canon, such as the same Pāli verse as that on stone dhammacakkas from Nakhorn Pathom and the Upagupta episode (Cœdès 1968a). This has led some scholars to consider this text as showing links to Northern Sanskrit Buddhism and maybe to Mōn sources (Guillon 1987: 155).

The oldest images of the Earth Goddess wringing her hair have been traced to Burma, and particularly Arakan (Duroiselle 1924: 145; Guillon 1987: 144). After this, the goddess appears in Bagan art (Guthrie 2004: 34-35), including on a twelfth century Bagan stele in the Asian Civilization Museum in Singapore, where the goddess is issuing from a lotus stalk with double lotus bud under the main Marāvijaya Buddha.

Later examples in Arakan attest to the long-lasting success of this iconography (Raymond 1998), and a stucco on terracotta image from the Le-mro period (possibly from the thirteenth century), with influence from Bagan seen through its technical aspect, shows the Earth Goddess wringing her hair accompanied by bearing *yakṣas* (Gutman 2001: 69). Later, some images of the crowned Māravijaya Buddha associated with the coronation of kings in Arakan have an Earth Goddess wringing her hair in front of the throne, and one of them, attributed to Mōn influence on Burmese culture after the capture of Pegu by Tabinshweti in AD 1541, shows the goddess wearing two strands of hair and squatting, as do the bearing *yakṣas* from Dvāravatī (Gutman 1979: 53, 55-56, note 24). She (or maybe he) is accompanied by figures embodying royalty: a lion, an elephant and a balu (Burmese equivalent of a *yakṣa*).

Māravijaya images with the Earth Deity wringing her hair have also been traced in Khmer architecture from the early twelfth century, and some scholars have assumed that this iconography could even be a Khmer invention (Dagens 2003: 200-201; Roveda 2005: pls 6.29-6.33, 6.36, 6.39). Indeed, the goddess has been traced on several Angkor *Vat* carvings (Guthrie 2004: 36-37), as well as on some Bayon-style bronzes, Bayon and post-Bayon monuments such as Beng Mealea, Ta Prohm, Banteay Kdei, Preah Khan, and Ta Prohm in Bātī (Boisselier 1952: 218, pl. XV 3, 1966: 300, 339, pl. LIX 2; Guthrie 2004: 37-40). But it is on a Baphuon-style bronze base discovered in the Wat Phra Srī Ratana Mahāthāt in Suphanburī that she

appears first associated with Māra's army *yakṣas* (who are depicted with Māra's daughters and *garuḍas*), though those *yakṣas* are neither dwarfish nor bearing (Woodward 1979: 76, fig. 5). The suggestion made by Woodward of Phimai as a possible place of origin for this base is particularly interesting here, as mixed Mōn influences have been detected in Phimai (Woodward 1979: 76-77; Moore and Smitthi Siribhadra 1992: 262).

It is from the post-Bayon period that the association of the Earth Goddess wringing her hair with the *yakṣas* of Mara's army is first attested on a Māravijaya Buddha image, on a late thirteenth to early fourteenth century stela from the Thousand Buddhas Gallery in Angkor *Vat* (Cœdès 1919) (Figure 13). This iconography remains favored during the post-Angkorean period, as attested by several reliefs from Thep Pranam (C. 119, C. 32, 2 in the National Museum in Phnom Penh), *Vat* Nokor (Figure 14) (Fournereau 1890: pl. 71; Giteau 1967: 136), Preah Palilay or Tonle Bati (Marchal 1951: 112-113, ph. 251; Boisselier 1966: 347, pl. LXI 1; Roveda 2005: 237, pl. 6.40).

In Siamese art, this iconography has been preserved not earlier than the fourteenth century, in Māra's Assault on the back side of the *buddhapada* in Wat Phra Rūp in Suphanburī, where it appears to have strong links with Khmer depictions of the throne, so important in the Khmer images of *Māradharsana* (Giteau 1967: 131): the throne alone is embodying the Buddha and the standing Earth deity is accompanied by two figures of Māra on his elephant Girimekhala, recalling the figures on the *Vat* Nokor eastern pediment, and with *yakṣas* whose face and headdress recall those of the Bayon-style asuras (such as the giants on the Angkor Thom and Preah Khan causeways). The position of the *yakṣas* under or in front of the throne, rather than bearing it, with the central one squatting as in Dvāravatī, conforms nevertheless to the iconography which seems to have been particularly popular in the late fifteenth and sixteenth centuries in the Ayuthayā Kingdom. A Khmer origin would be quite possible, either as a consequence of the 1431 Siamese invasion of Angkor and its reputed influence on Siamese art, or, more probably, through Khmer presence in Thailand, as there are some similarities with *yakṣas* from monuments in Lopburī (Figure 15) and Sukhothai.

It appears that the Siamese *yakṣas*' depiction (which occurs also without the Earth Goddess) generally follows a different pattern than the few Khmer-style ones, particularly as in Khmer art bearing *garuḍas* seem to replace bearing *yakṣas*. Siamese *yakṣas* conform to other prototypes, traceable in the art of Sukhothai and of Lopburī, but which reflect the specificities of Mōn *yakṣas*. While a late fifteenth century Mōn source from Pegu to the *yakṣas* of Mara's army

seems quite likely (after Woodward 1997: 231), maybe through Mōn refugees fleeing from the Tabinshweti invasion of Pegu in 1539 and mixed with Khmer elements, a Mōn-Dvāravatī source appears also probable, maybe through the Lopburī school, as compared to *yakṣas* from the architecture of Dvāravatī monuments (Zaleski 2009: figs 1, 15, 19-20), and to the stone *yakṣas* from Wat Na Phra Men (Figures 1a-b).

Conclusion

The Wat Na Phra Men *yakṣas* supporting a lotus pedestal allow some remarks and a deductive hypothesis. These *yakṣas* seem to have been associated with at least one larger image, which could have been a stone Māravijaya Buddha performing the *bhūmisparśamudrā*; this image may have been destroyed, dismantled or maybe even hidden. Despite the paradoxical scarcity of this type of image in the Mōn areas of Dvāravatī, mostly Hariphuñchaï, this iconography associated with Bodhgaya is to be found in contemporaneous post-Gupta, early Pāla, Pyu, Mōn from Lower Burma, and Arakanese cultures, and becomes universally represented later, in Pāla and Pagan art, as well as in Lopburī and \overline{U} Thōng, and it becomes highly specific of theravāda traditions, for example in Sukhothaï, Lān Nā,

post-Angkorean Cambodia, and even in Nāgapattinam (Dehejia 1988: 64-65, No. 13).

If these *yakṣas* were ever associated with an Earth Deity in Māra's Assault, it would confirm that this iconography could be, if not a Mōn invention, at least a practice in Mōn Buddhism, or existing at the time of the development of Mōn culture. Though the Earth Goddess wringing her hair and supported by *yakṣas* occurs only in examples from Ayuthayā (on the *Vat* Nokor pediment, where she is supported by a Kīrtimukha while two *yakṣas* are on the sides), she is usually associated with bearing *yakṣas*. That figures from Mara's Assault, such as an Earth Goddess wringing her hair as in the episode described in the



Figure 15. Yakṣa from Wat Nakhorn Kōsā, Lopburī, courtesy Muang Boran.

Pathamasambodhi, could have been supported by these bearing *yakṣas* remains a conjecture that I take the liberty to propose here to reassess the third option to the origin of this iconography: a Mōn one, besides or probably underlying the so-called Khmer and Burmese ones.

Acknowledgements

I wish to thank William Southworth, who brought to my knowledge the existence of the *yakṣa* in the National Museum in Hanoi.

Representations of the female in Thai Buddhist manuscript paintings

Jana Igunma

Thai manuscript painting covers a wide range of topics, which include Buddhist themes such as the Ten Birth Tales, the life of the Buddha, the Traiphum cosmology and the legend of Phra Malai, but also yantra designs and horoscope making (phrommachat). Besides this, there exist finely illustrated manuscripts dealing with real and mythical animals, traditional medicine, literature, warfare and geography. My aim here is to explore representations of the female in illustrated Buddhist manuscripts from central Thailand held in the collections of the British Library. Whereas the written text in a Buddhist manuscript may not always pay much attention – or none at all – to the female, the illustrations often depict male and female beings, and sometimes the relationships between them, in a well-balanced manner.

Introduction

Before the late Dr Henry Ginsburg, Curator for Thai, Lao and Cambodian at the British Library for more than three decades, went on his final journey to New York in 2007, he handed over to me a finely illustrated Thotsachat (Ten Birth Tales) manuscript (Or 16552) that he had acquired for the library. This manuscript turned out to be one of the most beautiful and precious manuscripts that the British Library holds in their Thai, Lao and Cambodian collections today.

After his sudden and unexpected death, Ginsburg's archive was donated to the library, including a huge collection of newspaper cuttings, articles from research journals, off-prints of his own publications as well as letters and notes written by Henry Ginsberg himself. Going through the archive, an article in which Napat Sirisambhand and Alec Gordon (2001) were 'Seeking Thai gender history: using historical murals as a source of evidence' caught my eye. In that article, the authors give examples of murals illustrating the status and recognition of women in pre-twentieth century Thai society, and remark that 'There are indications of gender blindness on the part of many present-day observers who assume that what holds today held yesterday' (*ibid.:* 23). As an example, they mention the nowadays-unthinkable picture of a female *mahout*, whereas in nineteenth-century CE mural paintings female elephant drivers seemed not to be regarded as anything unusual.

It sprang to my mind that there are many parallels between Thai mural paintings and manuscript illustrations, as Henry Ginsburg himself showed in his numerous publications (Igunma 2010). However, there is one significant difference. Manuscript illustrations usually accompany a text that constitutes the main part of the manuscript, or a collection of texts put together in one manuscript for a certain purpose (Ginsburg 2005). Often these would be texts of a Buddhist nature, written or copied by monks or male scribes for the use of monks, who would chant or recite these texts to lay people, both male and female. The question arose as to how and to what extent representations of the female occur in Buddhist Thai manuscript painting, and in which textual context they occur.

Ginsburg's detailed descriptions in his two books on Thai manuscript painting (1989, 2000) reveal that illustrations in Thai manuscripts often accompany texts of a religious, ritual or quasi-scientific nature, but they do not always directly illustrate the text. This is particularly often the case with Buddhist texts. For example, scenes from the Ten Birth Tales illustrating the ten perfections of the Buddha are often added to a collection of texts from the Pali canon (Ginsburg 2000: 54-84), or to texts which relate to the ten perfections of the Buddha, e.g. Mahabuddhaguna. Sometimes we find scenes of the *himavanta* accompanying compilations of various *sutra* or chanting texts put together to be read aloud or chanted at funerals.
The Ten Birth Tales (Thotsachat or Sip Chat)

The Ten Birth Tales (Ginsburg 2000: 54-84) comprise the last ten Jatakas, which describe the ten existences of the Buddha before he was reborn as Prince Siddharta, later to become the Enlightened One. The titles of the Ten Birth Tales are:

- 1. Temiya Jataka (illustrating the Perfection of Renunciation)
- 2. Mahajanaka Jataka (illustrating the Perfection of Perseverance)
- 3. Sama Jataka (illustrating the Perfection of Loving Kindness)
- 4. Nimi Jataka (illustrating the Perfection of Resolution)
- 5. Mahosadha Jataka (illustrating the Perfection of Wisdom)
- 6. Bhuridatta Jataka (illustrating the Perfection of Moral Practice)
- 7. Candakumara Jataka (illustrating Perfection of Forbearance)
- 8. Narada Jataka (illustrating Perfection of Equanimity)
- 9. Vidhura Pandita Jataka (illustrating Perfection of Truth)
- 10. Vessantara Jataka (illustrating Perfection of Charity).

The Vessantara Jataka

Although all ten Jatakas are very popular among Thai Buddhists, the Vessantara is the best known and most famous, since it is regularly performed on theatre stages at annual Buddhist festivals or during temple fairs throughout Thailand. Therefore, manuscript illustrations as well as mural paintings depicting scenes from the Vessantara Jataka are always easily recognized.

The manuscript acquired from Henry Ginsburg (Or 16552) is richly illustrated with scenes from the Ten Birth Tales, especially the Vessantara Jataka. The undated manuscript is from the second half of the nineteenth century CE, with outstanding miniature paintings in Rattanakosin style on eighteen folios. The text is written in thin Khom script, a variant of Khmer script used in Thailand until the end of the nineteenth century. It contains extracts from the Abhidhammapitaka (Dhammasangani, Vibhanga, Dhatukatha, Puggalapannatti, Kathavatthu, Yamaka, Mahapatthana), the Vinayapitaka (Parajika), the Suttantapitaka (Dighanikaya, Brahmajalasutta), and Mahabuddhagunakatha, which constitutes the main part of the text. The paintings are not directly related to the written text. However, each of the Ten Birth Tales symbolizes one particular virtue or perfection of the Buddha, in this case the virtue of charity.

The Vessantara Jataka depicts the life of Prince Vessantara, who from early childhood on shows true generosity and a great sense of charity. He gives away all his possessions, including an elephant he grew up with, his children to become servants of the wife of the evil-spirited Brahmin Jujaka (Chuchok), and finally his beloved wife Madri. However, in the end they all get back together again with the help of the gods.

Or 16552, f. 26

The people of his kingdom find Vessantara's generosity distressing and frightening. They pursue Vessantara's father to take back the kingdom from his son and drive him into exile, eventually followed by his wife and children. Before their departure they pay a visit to Vessantara's mother, Phusati. This miniature painting (Figure 1) shows Vessantara with his wife and children during their visit to Phusati. Phusati is on the left side, kneeling on an elevated pedestal in her alms hall. She faces Vessantara, who sits in front of her on a slightly lower pedestal, together with his wife Madri and their two children, who are sitting on her lap.



Figure 1. Vessantara and his family paying respect to Vessantara's mother, Phusati. Illustration in a Thai folding book containing extracts from the Tipitaka, central Thailand, nineteenth century. British Library, Or 16552 f.26. © The British Library Board.



Figure 2. Madri in the forest. Illustration in a Thai folding book containing extracts from the Tipitaka, central Thailand, nineteenth century. British Library, Or 16552 f.52. © The British Library Board.

Vessantara greets and pays respect to his mother with a *wai* (greeting and praying gesture) while she is patting his right shoulder to console her son, and to give her blessings for their departure. Phusati and Vessantara have the same fair color of skin, whereas Madri is slightly darker. The headgear, jewelry and clothes of all three, along with the children's outfits, show that they are of royal descent. In front of the pedestal one can see female attendants of one or both women. The painting illustrates the social rule to honor and respect one's own mother, or elders in general.

Or 16552, f. 52

After their departure from the kingdom, Vessantara and his family decide to live in a forest as hermits. This painting depicts Madri collecting fruits in the forest for her family (Figure 2). While this scene is happening, the Brahmin Jujaka meets Vessantara to ask for his two children to become the Brahmin's wife's servants. Vessantara brokenheartedly gives away his children as an act of ultimate charity. As Jujaka drives the wailing children through the forest, the gods are thinking of Madri's anguish if she should see them in this state. Three gods decide to take the forms of a lion, tiger and leopard to block the path of Madri, thus preventing her return to the hermitage until after night has fallen.

In the painting, Madri is kneeling down in front of the three animals, greeting them with a *wai* fearlessly and respectfully. Her jewelry still shows that she is of royal descent, but her clothes reveal that she is living as a hermit. In front of her are two baskets with forest fruits on a carrying stick. The three animals are only partly visible. The lion bears the shape of a mythical lion, Rajasiha, whereas the two other wild cats look very much alike, resembling more the shape of a tiger than a leopard. In the background, there are rocks, trees, flowers and birds, which give the whole scene a rather peaceful and calm atmosphere. The same peaceful state of mind and calmness can be seen in the figure of Madri.

Or 14859, f. 166/167

Another manuscript featuring the Vessantara Jataka is a collection of drawings on paper, bound together in a European-style book with a textile hardcover (Or 14859). It contains pencil drawings of the Thai Ramayana (Ramakien) and colored drawings of the Vessantara Jataka. There is a caption written in Khom script for each drawing. The drawings are estimated to have been made in the second half of the nineteenth century CE.

The drawing discussed here reveals how it happened that the Brahmin Jujaka went to ask for Vessantara's children to become his servants. Jujaka, a greedy old Brahmin, lives as a beggar with his young wife Amittada. She is beautiful, caring and hard-working. On a daily basis she goes to the village well to bring water for her old husband. The husbands of the other women in the village praise her as an example of a good wife until one day, in a fit of jealousy, all the village women gather by the well to beat her up, pulling her hair and tearing her clothes. From that day on, Amittada refuses to go to the well, and insists that Jujaka should find her some servants in order to spare her ridicule by the other women.

On folio 166 (Figure 3, left) we see Amittada surrounded by four village women who are beating her with a cane, pulling her hair, her arms and her clothes until her bare breasts are exposed. A pot is on the floor with water spilling out. Amittada's facial expression shows distress and pain. Folio 167 (Figure 3, right) depicts Amittada on her return to the simple home she shares with her husband. Jujaka is sitting on the ladder, his body frail and his head bald. His wife brings home the empty water pot. Her face still shows signs of the distress and humiliation that she had to endure at the well. The scenes shown in these two drawings tell of female jealousy and its possible negative results, which in this case affect the totally innocent family of Vessantara.

Narada Jataka

Another of The Ten Birth Tales, the Narada Jataka, tells of the generous King Andati who was deceived by a false ascetic and ceased giving alms to the poor. His only daughter, Ruja, prayed for help from the gods to bring her father back to his senses. The Buddha, who exists in this Jataka as the celestial deity Narada, appeared before the king to warn him that those who followed false doctrine would be condemned to a horrific existence in hell. The king showed remorse and begged Narada for forgiveness, and finally resolved to provide for those living in poverty (Cowell 2000: 114ff.).

A manuscript dating back to the late eighteenth century CE (Or 14068) with the *Mahabuddhaguna* as its main text also contains paintings of The Ten Birth Tales to illustrate the ten perfections of the Buddha. The text is in Pali language written in round Khom (Mul) script.

Or 14068, f. 9

This painting depicts King Andati's daughter Ruja kneeling on a pedestal in the left bottom quarter of the picture (Figure 4). In addition to her royal outfit she is shown with a red aura, which is similar to the aura often seen in Thai manuscript painting with the future Buddha, Maitreya, or the saint Phra Malai. Ruja is praying to the deity Narada while sitting behind textile screens, which are surrounded by flags and tiered umbrellas. With her are four female attendants, one carrying an offering bowl. The four-armed Narada can be seen floating in the air in the upper right quarter of the painting. Ruja is to be seen as an example of a good daughter and a strong believer in and upholder of Buddhist moral standards; this explains her decoration with the aura of a saint.



Figure 3. Scenes from the Vessantara Jataka in an album of drawings from the Ramayana and the Vessantara Jataka, Thailand, 1880. British Library, Or 14895 f.166/167. © The British Library Board.

> Figure 4. King Andati's daughter, Ruja, praying to the gods on behalf of her father. Illustration in a folding book containing the Mahabuddhaguna and extracts from the Tipitaka, central Thailand, eighteenth century. British Library, Or 14068 f.9. © The British Library Board.



Bhuridatta Jataka

The Bhuridatta Jataka tells of the Buddha who had formerly been reborn as a naga (serpent) prince, who practised meditations every night coiled around an anthill under a banyan tree. He had earned the name Bhuridatta, or godly Datta, because of his wisdom and goodness, and he aimed to follow the Eight Precepts. An evil Brahmin and snake charmer named Alambayana obtained magic spells from a hermit in order to capture Bhuridatta and force him to perform in marketplaces, so that the Brahmin would earn fame and wealth. The naga prince repressed his shame and anger in order to follow the Eight Precepts. Eventually, he was freed by his three brothers (Cowell 2000: 80ff.).

A paper folding book dated 1841 CE, with extracts from the Abhidhamma and fourteen pairs of illustrations of The Ten Birth Tales (Or. 15925), contains an unusual painting that depicts the meditating Bhuridatta. The text is written neatly in Khom script, with only a short colophon in Thai. The painting, with a plain yellow frame, is simply composed in yellow and brown on a dark blue background. The painting style is a mixture of elements from the eighteenth and nineteenth centuries, possibly with some Indian influences.

Or 15925, f. 12 30

Nagas are believed to be magical serpents who can assume human form when they wish. This painting (Figure 5) depicts Bhuridatta practicing meditation while coiled around a huge ant hill. In front of the serpent are two naga maidens in human form, dressed and adorned like performers at a royal court. Both have gentle facial expressions and kneel on the floor, the one on the left dancing with her upper body, and the maiden on the right playing the krachap pi, a four-stringed fretted lute. The duty of the maidens is to wake Bhuridatta up from his meditation every morning and to escort him back to the realm of the nagas, where he would spend the daytime before coming back at night to resume his meditations.

Another illustration from the Mahabuddhaguna manuscript (Or 14068) depicts a different scene from the Bhuridatta Jataka. In order to capture the naga prince, Alambayana enquired with a hunter as to the whereabouts of the mightiest of all nagas. The hunter saw that the Brahmin was in possession of a magic jewel from the world of the nagas, which the woodsman once had been offered by Bhuridatta himself. The hunter had formerly discovered the meditation place of the naga prince. To keep the



Figure 5. Scene from the Bhuridatta Jataka in a folding book containing the Mahabuddhaguna and selected suttas, central Thailand, 1841. British Library, Or 15925 f.12. © The British Library Board.

man from revealing it, Bhuridatta had invited him and his son to follow him to the naga kingdom and live there in splendor. They had accepted and had lived in great ease and luxury. However, after some time the hunter and his son had become restless and wished to return to the human world and see their family again. Bhuridatta, anxious for him to stay, had offered the hunter great riches, including the magic jewel that was said to grant all desires. But the woodsman, determined to return to the world of men, had refused everything, saving he wanted to become an ascetic like Bhuridatta. Thus, he and his son had returned to their former dwelling. However, when his wife heard that he had decided to become a hermit and leave her again, she urged him to stay and help her support their family. Therefore, he had resumed his former life as a humble hunter.



Or 14068, f. 7

The rather dramatic illustration (Figure 6) shows the hunter on the left, pointing toward where the Brahmin

Figure 6. A hunter's wife overhearing her husband and a Brahmin plotting to capture Bhuridatta. Illustration in a folding book containing the Mahabuddhaguna and extracts from the Tipitaka, central Thailand, eighteenth century. British Library, Or 14068 f.7. © The British Library Board.

can find the naga prince. The hunter wears a simple loin cloth and has a bow and arrow and a large knife. Alambayana is on the right side, carrying the magic jewel in his left hand. He is wearing a loin cloth and has his long hair tied up in a chignon covered by a small piece of white cloth. The two men are standing in front of a row of hills and rocks, painted yellow and grey.

The woodsman's wife is standing behind some bushes, probably trying to hide from the men. She is dressed in red with a necklace and bracelets, carrying a large machete in her right hand. With her left hand cupping her ear, she seems be trying to eavesdrop on the men. Apparently, she does not want her husband to get involved with the Brahmin. The hunter's wife could perhaps be seen to represent the down-to-earth character of many women. Her utmost concern is the well-being of her children and the machete in her hand suggests she would not hesitate to resort to drastic measures to protect her family. Although such controlling behavior of a wife over her husband is not exactly favored, in this case it could have prevented the capture and humiliation of Bhuridatta.

Mahajanaka Jataka

This Jataka is about Prince Janaka, whose father was killed by his brother. Janaka was born in exile. When grown up, he undertook a sea voyage to his homeland, but suffered a shipwreck. He struggled to survive, swimming in the ocean for seven days until he decided to follow the Eight Precepts. Then, the goddess Manimekhala, guardian of the seas, came to rescue him and to carry him to his late father's

11 11 858525555 558585252535885 55537787878588 810 : systemetras assessess 558350 RE5055850 II 838588588850 តាមានអត្ថែរតារាតិស្នំ នាមព្រះពោទា នគរាមនុស្សគរមានចំណូ โรยารเสลภ์อา ສສາຮາລາຣາ : ឧភាភិទនា(ខនុន្ត **55**\$\$\$\$\$\$\$\$\$ ເຮກາຍຸກກ່ຽງ ເວລະຄຸກາຍານກ່ຽງ នទោរមូនភ័នា «អំទេរទារវ : ឆារចូននិងសមត្ថខេរ \$55.55DESSO പടെങ്ങളുണ്ടെ രണ តមាតហោត អំគាតហោត ភទ្ធខំសាឆា និក្ខខ្មុសត្រភាពរា នុងសារសាភា ន៍អត់អាតអាភា ន៍ផ្លូវសារ 550505000 and gettermer and gettermer was gettermer :

Figure 7. Two scenes from the Mahajanaka Jataka in a folding book containing the Mahabuddhaguna and extracts from the Tipitaka, central Thailand, eighteenth century. British Library, Or 14068 f.3. © The British Library Board.

kingdom, Mithila. In the meantime, his uncle and his father's murderer passed away and the vacant throne awaited the man who could marry Princess Sivali, who had a very sharp mind. Janaka had to pass many tests, but finally won the throne and Sivali's heart. The Mahabuddhagunam manuscript (Or 14068) provides two miniature paintings illustrating the Mahajanaka Jataka.

Or 14068, f. 3

The lively illumination on the right side of Figure 7 depicts the disastrous event when Prince Janaka's ship is sinking. The sea is set before a bright red background with nine humans struggling to survive in the waves. Three of the men are being eaten by giant fish, while the richly-decorated ship is half under water. One of the men has a beard and a turban, which suggests he could be a trader originating from South Asia. Prince Janaka can be seen in the center of the painting, wearing red clothes, jewelry and green headgear. In front of him are two huge flags, and above him the goddess Manimekhala is floating in the air. She is adorned with jewelry and a green and red sarong. She stretches her hand out to reach Janaka, to rescue him. Because she is a goddess, she appears slightly larger than the humans in the water.

The illustration on the left side reveals a less well-known scene from the Mahajanaka Jataka. The story goes that sometime after Janaka had become king he was riding through his kingdom and observed two mango trees. One that originally had been full of mangoes was broken by people who had come to harvest the fruit, while the other tree, though barren, stood green and whole. Seeing this, he realized that possessions bring only sorrow, and he determined to put aside his kingdom and take up the life of an ascetic. Queen Sivali followed him with a great retinue, which Janaka could not bear. This painting shows Janaka as an ascetic with orange robe, a fan, an alms bowl, and a clean-shaven head, as if he were a hermit. He is said to have cut a stalk of grass while telling his former wife, who is seen kneeling down with two attendants: 'This stalk cannot be joined again, so our intercourse can never be joined again' (Cowell 2000: 37). The queen and her attendants seem to be slightly smaller than the ascetic. The scene takes place under a blossoming tree with two white doves on its branches. The story goes that Janaka disappeared into the forest, and the queen returned home and arranged for the coronation of their son. After settling the affairs of the kingdom, she herself decided to live the life of an ascetic and eventually was reborn in the Buddhist heavens.

Phra Malai

Phra Malai, the Buddhist saint known for his legendary travels to heaven and hell (Ginsburg 2000: 92), has long figured prominently in Thai religious treatises, works of art, and rituals – particularly those associated with the afterlife (compare Brereton 1995 and Ginsburg 2000: 92-111). The story is one of the most popular subjects of nineteenth-century illustrated Thai manuscripts. The earliest examples date back to the late eighteenth century CE, though it is assumed that the story is much older and could be based on the Ksitigarbha Bodhisattva Sutra. This sutra is particularly well known in Mahāyāna Buddhism and may have found its way into mainland Southeast Asia via China. In nineteenth-century Thailand it became a popular chanting text for funerals in Thailand and Laos; examples can be seen online at Digital Library of Lao Manuscripts (viewed 26 November 2019, <www.laomanuscripts.net>).

Phra Malai is the legend of a Buddhist monk of the Theravada tradition, who is believed to have been of Sri Lankan origin, as the Pali title of the legend is Malayatheravanna (Malaya being a Pali proper name referring to the island of Sri Lanka or a mountainous region in South India). The entire legend of Phra Malai has been translated from Thai by Brereton (1995). Phra Malai was said to have attained supernatural powers through his accumulated merit and meditation. The legend describes how he visits the heavens and hells, and afterwards tells his lay followers and fellow monks what he has seen. By his visit to one hell, he bestows mercy on the creatures suffering there and temporarily brings relief to their misery. They implore him to warn their relatives on earth of the horrors of hell and how they may escape them through making merit, meditation and following the Buddhist precepts. Back on earth, he receives an offering of eight lotus flowers from a poor man, which he promises to take along to heaven and to offer at the Chulamani Chedi, a heavenly stupa containing a relic of the Buddha. In heaven, Phra Malai engages in discourse with Indra, the king of the gods. Eventually, he meets and speaks with the Buddha-to-come, Metteyya, who reveals to the monk insights about the future of the humans on earth.

It was through tales of Phra Malai that the karmic effects of human actions were taught to the faithful at funerals and other merit-making occasions on behalf of the deceased. It was also through these verbal and visual narratives that Metteyya's message of hope for a better rebirth and for attaining *nirvana* was conveyed. According to the Buddha Metteyya, following the Buddhist precepts, making merit, and attendance at a Vessantara Jataka performance count as virtues that increase the chances of a more favorable rebirth, or *nirvana* in the end (Brereton 1995).

Although the subject of hell is mentioned in the Pali canon (e.g. in the Nimi Lohakumbhi and Samkicca Jatakas, the Devaduta and Balapanditta Suttas, the Peta-vatthu etc.; see Cowell 2000) it is believed that the legend of Phra Malai helped to shape the idea of hell in Thai society.

A folding book dated to 1875 CE contains as its main text the legend of Phra Malai in Thai language (Or 6630). Other texts in this manuscript include extracts from the Vinayapitaka, Suttantapitaka, Ahbidhammapitaka, Vibhanga, Puggalapannati, Sahassaneyya and other short texts in the Pali language. The texts, written in Khom script, are illuminated by fourteen paired paintings on seven folios showing scenes from the Phra Malai. Only a short colophon on the last folio is in Thai script. An illustration on folio 42 depicts the scene of Phra Malai's visit to the Buddhist heavens where the future Buddha, Metteyya, resides.

Or 6630, f. 42

The two lavish paintings which show scenes from the Tavatimsa and Tusita heavens are dominated by bright red and golden colors (Figure 8). On the left side, Phra Malai is sitting on a blue mat in front of the Chulamani Chedi in Tavatimsa heaven, which is flanked by two temple banners (*phrabot*), with his

00000000 สภาพม ถ้ายช่ออา

Figure 8. Phra Malai in the Buddhist heavens. Illustrations in a folding book containing the legend of Phra Malai, central Thailand, 1875. British Library, Or 6630 f. 42. © The British Library Board.

alms bowl, a water container, and an offering tray by his side. In front of him are seated Indra and a male deity (deva). Phra Malai is pointing to something outside the painting, or to the painting on the right side, which shows eight female devata surrounding one male figure who is the Buddha-to-come, Metteyya, in his current celestial incarnation in Tusita heaven. The female figures are in seating positions whereas the male figure is in a floating position. All of them are wearing royal adornments, but the male figure is shown with a dark red aureole of a Bodhisattva.

Or 14956, f. 40

The illustrator of another manuscript containing the legend of Phra Malai (Or 14956) had a different idea of the event in Tavatimsa heaven (Figure 9). This manuscript is also dated to 1875 CE in a colophon in Thai

Figure 9 Phra Malai in Tusita heaven in a folding book containing the legend of Phra Malai, central Thailand, 1875. British Library, Or 14956 f. 40. © The British Library Board.



อเสื้ออยถึงกฎรับบา เร่ตั้งหัวไร่า ไม่เยาเองเข้านั้น. อเอาริ่แต่หญิรัญ เห่ราสาย เหล เบรตาเปรีย anosing preserver anon neg ALENSTRAT ອອບເຮັງແຄງຮັບ ເຊື່ອການ ເຄາະແຄງເອກ อร์มีรีรี (คา: ยาใญๆ ค้รุกค้เกา ได้พระบรกิศุภร อเฉราสมญหมี กาลิไอโญสี แร่สญรูเบลี่สมุดภ อเริ่าประเทณเขณ ไม้ล้องกา กระบองหลิมภากา อ (กะเราสมผูรบาร เสิสิรรริธุสาร จะเบสเจริมันกา

Figure 10. Phra Malai's visit to the Buddhist hells. Illustrations in a folding book containing the legend of Phra Malai and short extracts from the Tipitaka, central Thailand, nineteenth century. British Library, Or 14117 f.25. © The British Library Board.

script. All other text is written in thin Khom script. Here once again we can see Phra Malai seated with his fan and his alms bowl, pointing to something outside the picture. Behind him is the Chulamani Chedi covered in a bright blue triangular shape flanked by a temple banner (*phrabot*) and lanterns. In front of Phra Malai sits Indra together with one female figure, possibly his wife Indrani.

The comparison of the heaven scene in these two manuscripts, produced in the same year by different scribes and painters, shows that manuscript painters were relatively free in their own interpretation of the text.

Phra Malai's visit to the various hells is illustrated in a dark but lively manner in most manuscripts containing this legend. A particularly dark hell scene can be found in a manuscript from the late nineteenth century containing extracts from the Vinayapitaka, Suttantapitaka, Abhidhammapitaka, and the story of Phra Malai (Or 14117). The text in this manuscript is in Khom script, except for a short colophon which is in Thai script. There are altogether eight paired illustrations, including two showing devata and one showing chanting monks.

Or 14117, f. 25

The hell scenes on this folio are both on a completely black background (Figure 10). On the left side, naked sufferers in the hell for adulterers are being chased up so-called *kapok* trees by a hell guard with a spear and a hell dog. The trees are believed to have a height of up to ten miles, and their flaming thorns to be as sharp as knives of steel. The woman on top of the tree is trying to help the other person who has been wounded already and is desperate to escape the dog and the guard.

The illustration on the right side shows Phra Malai with his fan, in a floating position above the heads of female and male inhabitants of another hell. The skinny sufferers in this hell can be seen kneeling, begging Phra Malai to teach their relatives in the human realm, Jambudipa, about their fate and to ask them to make merit on their behalf.

รัฐบญ aunie ragisi ETEREN

Figure 11. Two scenes from the legend of Phra Malai in a folding book containing the legend and short extracts from the Tipitaka, central Thailand, nineteenth century. British Library, Or 14731 f.92. © The British Library Board.

Phra Malai manuscripts often contain genre scenes showing lay people either listening to the teachings of Phra Malai (who could represent any Buddhist monk of the Theravada tradition), or offering him food, incense sticks and other items for his personal use. A manuscript probably dated to the first half of the nineteenth century CE includes extracts from the Abhidhammamatika in Khom script and six paired illustrations, in addition to the legend of the monk (Or 14731).

Or 14731, f. 92

The two paintings on the last folio of this manuscript depict an everyday scene from nineteenth-century central Thailand (Figure 11), but similar scenes can still be seen up to today. On the left side, Phra Malai with his fan and alms bowl is standing on front of an elderly lady who kneels under a tree, her hands together in a *wai*. Between her and the monk sits her bowl with a ladle containing food offerings. She is dressed in white and has shaved her hair, which suggests that she is a female renunciant (*mae chi*) following the eight precepts. Officially, she is not a member of the Sangha, but she may live in a Buddhist temple or in a female Buddhist community. Thai women may become *mae chi* for a limited period of time, for example following the death of a family member. Some women, however, decide to remain *mae chi* for the rest of their lives, for example when they are elderly and/or have no close relatives to live with.

The painting on the right depicts a man followed by a woman, both lay people carrying offerings for Phra Malai, or for monks in general. It illustrates the act of making merit by giving offerings to Buddhist monks. In this case, these include a bowl of rice carried by the male figure, and a tray with fruits and incense sticks or candles in a special small container carried by the female figure. Both wear short haircuts and are tastefully dressed in eighteenth- or nineteenth-century Thai fashion.

Another genre scene related to the story of Phra Malai can be found in a manuscript from the early nineteenth century (Or 13703), which actually does not contain the legend itself, but has paintings illustrating the recitation of the legend, together with excerpts in Khom script from the Vinayapitaka,

Suttantapitaka, Ahidhammapitaka, Sahassaneyya, Buddhagunagatha and other texts traditionally used for chanting at funerals and ceremonies carried out in the period between the death of a person and the cremation of the body. Twenty pairs of illustrations depict scenes of meditation, teaching, chanting, illness, old age and death, deities, and the monk Phra Malai as a saint.

Or 13703, f. 81

This lavishly illustrated folio gives an impression of a typical scene at a Buddhist temple (*wat*) or in someone's home in nineteenth century CE Thailand. The paintings left and right of the text depict four monks preparing themselves for chanting, or possibly a Phra Malai recitation (Figure 12). They are seated on a huge pedestal or a stage, which would often be erected for the purpose of funeral ceremonies for important members of the community. In front of the monks are small tables with offerings and candles. Three of the monks are holding fans, which they would use to cover their faces while chanting.

In the center, below the text, one can see an illustration of two elderly women, which is rather unusual for a manuscript. However, in everyday life this would have been a very common situation. One of the women is lying on the ground with her hands in a praying position, obviously suffering great pain. Her stomach appears bloated whereas her chest is very thin. The other woman is sitting by her feet, massaging the legs of the ill woman. In the background are three earthenware pots that probably contain traditional medicines (*ya samun phrai*) or scented water for the washing of the corpse. Pressure massage was frequently used to reduce physical pain, but also to relieve the anxiety and emotional stress people encounter during or after traumatic events, for example the loss of a close family member, or indeed in the moment of death. A whole category of manuscripts (*tamra ya, tamra nuat, tamra phaet*) is dedicated to the treatment of diseases and the improvement of well-being (Igunma 2008). The painter's depiction of women in old age and ill health is very impressive in this miniature painting.



Figure 12. Scenes depicting Buddhist monks and two elderly women in a folding book containing extracts from the Tipitaka, central Thailand, nineteenth century. British Library, Or 14703 f.81. © The British Library Board.

Outlook

I wrote this paper from the perspective of a librarian, with the aim of assisting the researcher specializing in Thai manuscript painting. I have provided an overview of representations of the female in Thai Buddhist manuscript paintings found in manuscripts held by the British Library, and I hope to encourage more in-depth scholarly research on this topic. The manuscripts discussed in this paper form only a small part of the entire Thai, Lao and Cambodian manuscripts collection at the British Library, which comprises more than 350 manuscripts altogether. Jatakas and the legend of Phra Malai constitute only one part of illustrated Buddhist manuscripts, and besides Buddhist manuscripts there are numerous illustrated manuscripts with non-Buddhist content.

One future step would be to look at representations of the female in the Traiphum cosmology, in astrological manuals (*phrommachat*), in *yantra* and tattoo manuals, as well as in medical treatises. Although there are not many illustrated manuscripts containing literary works, a study of the Ramayana, for example, could provide further insight. Last but not least, one could investigate the representations of the female in animal treatises, which sometimes include descriptions of mythical animals and deities in animal shape, or in part human-part animal shape. One important aspect that I have noticed during my research is that females are equally represented in images of the real world as much as in the mythical world, including the underworld (*naraka*), the Himavanta, and the Buddhist heavens.

Genre scenes, which can often be found in Phra Malai manuscripts, depict the real world, and could be used for the interpretation of certain historical aspects of Thai culture, and the role that women may have played at certain times in history. Another important question is the relationship between text content and illustrations in Thai manuscripts. From previous research, we have seen that quite often there is not a direct connection between text and illumination. However, there can be an indirect correlation between text and images, such as, for example, illustrations from The Ten Birth Tales added to texts on Buddhist virtues.

On a more general note, a comparison of Thai manuscripts with illustrated manuscripts from the Lao, Shan, Burmese, Javanese and Balinese traditions could provide more information on the representation of females in these manuscript cultures, as well as similarities or differences of their roles in a certain historical and socio-cultural context, and a possible exchange of information, skills and materials.

Prajñāpāramitā in thirteenth century Java and Sumatra: two sculptures disconnected by textile designs

Lesley S Pullen

The Mahāyāna Buddhist goddess Prajñāpāramitā was widely patronized in East Java in the thirteenth century, as evidenced by the number of surviving images. This paper addresses the stylistic similarities between two stone sculptures of Prajñāpāramitā, one originating from Caṇḍi Singosari in East Java, now in the Museum Nasional Indonesia in Jakarta, and the other from the Muarajambi temple complex in central Sumatra, now in the site museum. Prima facie these two images suggest a close political, religious and artistic connection between Singhasāri and Muarajambi. Both figures are dressed in a cloth carved in bas relief with intricate repeated roundels, characteristic of a brocaded luxury cloth imported from China, but the roundels contain dissimilar designs and their carving differs markedly. Unfortunately, the lack of surviving inscriptions or other records has rendered problematic any research into their relationship. Consequently, it is only the sculptures themselves which remain as the primary source attesting to any connection.

Introduction

The subject of textile patterns on sculptures has seen little focus by scholars of Java and Sumatra. This paper will address stylistic similarities between certain aspects of two stone statues of the goddess Prajñāpāramitā. It will propose an argument that differs from some commonly-held views about the decoration on the statues and their relationship to one another. The question of socalled 'portrait statues' has long been contested in the art of Java (Reichle 2007: 51), where the image is thought to combine the iconography of deities with the idealized features of deceased kings and queens. The royal portrait after the process of deification was made with the representation of a god, with the nobility of spirit and the sincerity this representation required (Fontein et al. 1971: 43). The two sculptures, the Muarajambi (Figure 1), and the Jakarta (Figure 2), in my opinion show very little similarity in their style. The Jakarta statue is said to have been found at the site of Candi Singosari, and is associated with King Krtanāgara, the last king of the Singhasāri period (AD 1222-1292) (Hall 1992: 215). The Muarajambi statue was found at Muarajambi, but has also been attributed to the Singhasāri period, as it was thought to



Figure 1. Prajñāpāramitā, mid-thirteenth century, Caṇḍi Gumpung, Muara Jambi, Jambi Sumatra. Muarajambi site Museum, Jambi. 80 cm. Photo: L. Pullen.

appear stylistically similar, and to perhaps suggest close political, religious and artistic connections between these two regions. This stylistic comparison was based on the figure's ornaments, and the way her garments fold over her crossed legs (Figures 3-5) (Reichle 2007: 54; Sri Hardiati 2009: 78), leading to the belief that the two sculptures could have been made by the same hand in the same place around AD 1300.

The suggestion has been made that during the Kṛtanāgara period in East Java either the statue or its artisans were sent to Malayu-Jambi in Sumatra. It is the intention of this paper to refute this point.

There are in fact five known remaining statues still in existence of this goddess, including three from the Singhasāri period and one from the Majapahit Period, which would indicate the importance of - or perhaps suggest there was a cult of - the goddess at the time. In Pullen (2017), I placed the latter statue in a Transitions Period, as it is not realistically in the Majapahit style. Today, Prajñāpāramitā is used as an icon from history and contemporary statehood in Indonesia. A monumental modern image of the Jakarta Prajñāpāramitā stands in the Municipal Park in Malang, East Java. One damaged seated image remains in situ in the grounds of Candi Singosari and has been dated to AD 1292 (Kinney 2003: 137) (Figure 6). A further image is situated at Candi Boyolangu in East Java (Figure 7), dated to the mid-fourteenth century (Reichle 2007: 63). Both of these two sculptures are headless, badly damaged and larger in size than the two images of Praiñāpāramitā under discussion here (ibid.: 59-60). John Miksic has notified me that there is also a statue of Prajñāpāramitā located in the Pungung Raharjo Archaeological Site, Lampung, Sumatra. However, I have not seen this statue and cannot comment on its physiognomy, nor if it is carved with a textile pattern.



Figure 2. Prajñāpāramitā, c. 1280, Caņḍi Singosari, Caṇḍi E, Malang, East Java, Museum Nasional Indonesia, Jakarta, 1.26 m (Inv. no. MNI 1403-1387). Photo: CC Creative Commons.

Prajñāpāramitā is the Mahāyāna Buddhist goddess of transcendental wisdom and is commonly depicted sitting cross-legged in the lotus position (*padmāsana*) on a round lotus cushion with both hands in front of her chest in dharma-chakra mudrā (Fontein 1990: 160). A flower stalk twists around her left arm with its lotus supporting a book, the symbol of knowledge. The image at Muarajambi is damaged, with no visible head or arms, and the lotus base is covered by the kain or cloth. There was never any backslab, as the statue was carved in the round. The Jakarta image, however, is almost perfect apart from broken fingers. Both images are depicted richly adorned with upper arm bands, bracelets, a necklet and anklets. They display a crisply detailed belt, and long twisted chain of a triple string of beads (upavīta) around her neck, which falls over her folded legs to the āsana (base). A sash (uncal), decorated with brocaded flowers, also falls over her knees to the lotus base. Both images are depicted wearing a patterned *kain* (cloth) overlaid with a *sabut* (sash). The delicate patterning of the fabrics in both images appears to differ (Figures 3-5). Compared to the two remaining Prajñāpāramitā in the field that I have observed, the headless sculpture in the grounds of Candi Singosari does not appear to display a carved cloth (Figure 6), however the Boyolangyu image does. Severe weathering of the stone leaves the detail pattern very difficult to decipher, but with close analysis it appears to be made up of a series of interlocking circles just discernible on the lower legs (Figure 7).



Figure 3. Prajñāpāramitā, detail of legs in padmāsana, Muarajambi site museum, Jambi. Photo: L. Pullen.



Figure 4. Prajñāpāramitā, detail of the lower legs depicting the twisted pearl ratnopavīta and the flower-decorated waist sash and sinjang. Photo: L. Pullen.



Figure 5. Prajñāpāramitā, detail of sash, Museum Nasional Indonesia, Jakarta. Photo: L. Pullen.



Figure 7. Prajñāpāramitā, c. 1362, detail of legs, Caṇḍi Boyolangyu, East Java, 1.05 m. Photo: L. Pullen.



Figure 6. Prajñāpāramitā, c. 1300, situated at Caṇḍi Singosari, Malang. Photo: L. Pullen.

Kṛtanāgara's links with Sumatra

As noted above, both statues under discussion are said to have been made during the reign of King Kṛtanāgara and date to around AD 1300, the end of the Singhasāri period (Hall 1992: 215). Both images are of a Buddhist goddess, both are found in a Hindu-Buddhist caṇḍi. The Muarajambi image is from the southeast side of the island of Sumatra, and the Jakarta image from East Java. They have been stylistically dated to the Singhasāri period, when Śaivism was known to be the religion of the state and its people, but Mahāyāna Buddhism was followed by the elite (Brandes 1909: 24). Caṇḍi Singosari was built by King Kṛtanāgara but remained unfinished after his death in 1292 (Kinney 2003: 138). He was a Hindu-Buddhist king who patronized Esoteric practices. He was thought by Prapañca (the author of the fourteenth century *Nāgarakṛtāgama*) to be the king with the 'most self-confidence, only Gajah Mada could equal' (Stutterheim 1932: 50). Miksic suggests that a statue of Amoghapāśa was sent by King Kṛtanāgara in 1286 to the Batanghari River region of Malayu, Sumatra. It has an inscription stating that it was sent from Java and was a sign of the king asserting his suzerainty over the area (Miksic 2010b: 29-30). Even though it was recorded that Kṛtanāgara sent this Amoghapāśa to Sumatra, this is not enough evidence to suggest that the king also sent an image of Prajñāpāramitā to Malayu-Jambi. There is no record, and no extant inscriptions indicate this. Unfortunately, stylistic similarities of the two Prajñāpāramitā alone are not enough to prove this theory.

Sidomulyo (2010) revisited the *Mūla-Malurung* charters (1255) – an official document confirming a royal grant from the king Wiṣṇuvardhana to a loyal official concerning an area of land in the villages of *Mūla* and *Malurang* – after new evidence surfaced which demanded a re-evaluation of the accounts presented in the *Deśawarṇana* by Prapañca (the court poet in the time of the later Majapahit period) and the anonymous *Sĕrat Pararaton (ibid.*: 1; de Casparis and Mabbett 1992: 320), and a fresh interpretation of the first half of the history of the thirteenth century, which is based almost entirely on inscriptional evidence. This is the time that saw the rise of the Kingdom of Singhasāri. The young Kṛtanāgara came to the throne in 1268 on the death of his father and ruled as an independent sovereign from 1271. In 1275 he invaded Malayu-Jambi (known as the Malayu expedition), and died in 1292. After extensive research, there appears to be no mention of any sculptures having been commissioned during the period of Kṛtanāgara leaning towards Buddhism (Sidomulyo 2010: 25).

The *Mūla-Malurung* charter lists a number of royal shrines established by Wiṣṇuvardhana on behalf of his forbears, all of which displayed an image of the god Wiṣṇu; he was known to be a follower of Vaishnavism. Among the shrines listed was Caṇḍi Kidal, dated to 1245, which, according to Prapañca (Robson 1995: 65) contained statues of Śiva and Buddha. Sidomulyo (2010: 25-26) deduces that the images erected by Wiṣṇuvardhana in the mid-thirteenth century were replaced by his son Kṛtanāgara, who associated himself with Śiva-Buddha. Based on this logic, the dating of the Prajñāpāramitā images could be between the mid-thirteenth century and 1300.

Caṇḍi locations

Architectural monuments are permanent structures which give us valuable information as to their dating and their locations, whereas the find spots of smaller statues and ceramics do not necessarily provide us with information on where they were manufactured (Fontein *et al.* 1971: 42; Brandes 1909: 4). Despite the fact that the Muarajambi and Jakarta images were found in the two caṇḍi stated above, this does not necessarily mean these images were originally destined for these two locations. For instance, the Jakarta image has been attributed to Caṇḍi E at Singosari, which was also known as *Wayang* or *Putri*. The caṇḍi was built of soft white stone and by 1904 only the foundations remained (Blom 1939: 24). Judging by the ground plan, the temple was square in shape with projections at the middle of each side. Blom (1939) argued that the Jakarta image belonged to this temple. It has a square pedestal and projecting back-piece, is 1.26 meters high, and was one

of the best preserved images of this site (*ibid.*: 83-84). Unlike temples in central Java, which served mainly as monuments, temples in East Java also functioned as mausoleums for deceased kings (Chutiwongs 2004: 102). Caṇḍi E has now completely disappeared under local housing, which leaves us with no further means of studying the origins of this image and where exactly it was situated.

Muarajambi is a Buddhist temple complex situated on the Batang Hari River, forty kilometers downstream from the town of Jambi in east Sumatra. Śrivijaya, based around the Malay Peninsula and southeast Sumatra, was centered at Palembang on the Musi River, and from 1079-1082 at Malayu-Jambi on the Batang Hari River. This new site offered more direct access to the gold trade of the Minangkabau highlands, and displaced Palembang as the Śrivijaya imperial capital. Malayu-Jambi was later known simply as Jambi (Lieberman 2009: 775). Śrivijaya retained control over the Straits of Malacca and dominated the area up to north Sumatra and west Java (*ibid.*: 776). The people of Śrivijaya were seafaring traders and held control over the Straits of Melaka from as early as the seventh century. Palembang was a prosperous trading port for ships to and from China and India, as seen from three inscriptions dating from the testimony of the Chinese pilgrim Yijing. During this period there was a Palembang-based Śrivijaya polity that was united in a common interest in trade and the accumulation of wealth (Tarling 1999: 173-174). The Malay world diaspora, including much of southern Thailand, is where we see a certain similarity in the types of woven silk textiles also apparent in Palembang and on Bangka Island.

The Muarajambi temple complex was a center for Chinese monks such as Yijing to study Sanskrit and Buddhism before travelling onto Nālandā in east India (Tarling 1999: 173). Muarajambi is also believed to have had an important association with Tibetan Buddhism. In the late tenth century there was a special relationship between Śrivijaya and Tibet through the visit of the guru Atīśa from India, and his subsequent study of Buddhism in Sumatra for twelve years (980-1054). He later became one of the greatest leaders of Tibetan Buddhism (Peter Sharrock, personal communication, 14 Dec. 2012; Jambi Archaeological Heritage Conservation Centre 2012). In spite of inscriptional evidence linking Sumatra with Nālandā, art works show only a limited connection. However, Suleiman (1981: 23) does draw some parallels with the Sumatran sculpture. Elements from Java, Cambodia, India and Sri Lanka were often absorbed by the sculptors, who were free to blend imported details with their own ideas.

In the eleventh century, esoteric Buddhist sites emerged in several places in Sumatra, one of which was Muarajambi (Miksic 2010b: 25), which became an important religious center of the Malayu kingdom (eleventh-

thirteenth century) (Miksic 2010a: 260). A highly sophisticated society is thought at the time to have existed at Muarajambi. The complex had its own irrigation system, candis built of bricks, its people lived in wooden houses on stilts next to the river; the indications are that the king would have lived further inland, away from the river (based on conversations with local authorities at the Muarajambi site museum in 2012). Dating of the Muarajambi temple complex is based primarily on archaeological research on the brick structures, notably Candi Gumpung (Schnitger 1937: 5), where the Muarajambi Prajñāpāramitā image was found (Jambi Archaeological Heritage Conservation Centre 2012) (Figure 8). Chinese ceramics from the Southern Song-



Figure 8. Caṇḍi Gumpung, Muarajambi, Jambi. Photo: L. Pullen.

Yuan dynasty (1127-1368) and the Tang dynasty (618-906) (Rawson 1984: 227) were also found in the region. The Muarajambi site report concluded that the site was a legacy of the ancient Malay Kingdom, and the largest monument of the Hindu-Buddhist period (seventh-thirteenth centuries) in Indonesia (Jambi Archaeological Heritage Conservation Centre 2012).

Prajñāpāramitā, Caņdi Singosari, East Java

The Singosari image of Prajñāpāramitā was first seen in 1819 by the Dutch. In 1820 the statue was taken to Holland by Nicolaus Engelhard (governor of Java's north coast) and deposited in the Volkenkunde Leiden (Brandes 1909: 26). In 1978 the statue was returned to the Museum Nasional in Jakarta, where it is now installed in the front of the Treasures Room, displayed within a glass case. In the early twentieth century the Javanese referred to Prajñāpāramitā as Ken Dedes, a seminal figure in Javanese history, the first queen of Singhasāri, from whom all kings of Singhasāri and Majapahit descended. She was thought to be the daughter of a Mahāyāna Buddhist priest, and has often been called Queen Grandmother Gāyatrī the Rājnaptnī, and deified as the Queen Grandmother of the Majapahit (Dowling 1992). Candi Gayatri is also the name of the Boyolangu shrine (Candi Boyolangu in Tulungagung, East Java, noted above as the location of another Prajñāpāramitā image). The Nāgarakrtāgama texts describe the enshrinement of a queen here in the mid-fourteenth century, well into the Majapahit rule (Pigeaud 1960: canto 69.2, 69.3; Reichle 2007: 71). Based on the iconography alone, the Boyolangu image should also be dated to the Singhasāri dynasty (Reichle 2007: 64). Reichle (*ibid.*) states that '...the possibility that the statue at Boloyangu is not connected to the royal figure in the Nāgarakrtāgama seems unlikely. Thus, the use of the lotus-root iconography is not a fool proof method of dating statuary'. Based on the above logic, the image of the Rājnaptnī Prajñāpāramitā was thought to have been created in the image of Singosari Prajñāpāramitā.

Blom (1939) gives a brief description of the iconography of the Jakarta image. The statue was probably buried for some time prior to 1820, when it was discovered, and thus appears in near-perfect condition. The figure's general physiognomy, including her arched brows, sharp pointed nose and slender figure, is quite unique in the pantheon of East Javanese sculptures. However, she exhibits certain facial characteristics seen in some late Pāla (eighth-twelfth century) eastern Indian statues.

The style of the dress of the Jakarta image is in two parts. A sash (*sabut*) lays over her crossed thighs, tied in a large bow at her side, displaying the same pattern as the cloth which falls to her ankles. The many folds of the *kain* lay neatly on the top of the lotus cushion; the design is a repeat pattern of circles, characteristic of complex brocade weaving could have been carried out on a body-tension loom in Java or possibly in Sumatra (Figures 4-5). The following description of where the roundels meet is purely suggestive and interpretative of the pattern. The interstice between the circles is a star shape which consists of vegetal patterns; each one of the circles differs slightly, as the petals around the circle on the right knee vary from ten to eleven, and around the left knee there are thirteen. The pattern of the last two hundred years does not reveal any designs that come even close to this one. Reichle (2007: 54) describes this pattern as a *jilamprang* motif, which in modern Indonesia is seen as a traditional batik pattern.

My interpretation of the contiguous roundels represents four quadrants around a central circle; each quadrant contains two misshapen paisley motifs, a pattern which is difficult to describe but evokes so many possibilities. The most exuberant aspect of her dress is the double sashes. This distinctive decorative feature is carved with a flourish, and depicted tied as a large double bow at each side of the body (Figure 5), the loose ends drape over the lotus cushion to the pedestal. There are two different and distinct patterns drawn on the sash of a repeated vegetal design, suggestive of a brocade fabric , which gives the material

structure.. There has been little discussion in previous literature of the possible inspiration of the textile patterns on Prajñāpāramitā. The interpretation of these motifs is only conjecture and of course is open to further analysis. This statue displays a design unlike the Muarajambi sculpture, as the statue is not carved in the round, therefore the only areas of the kain visible are the sides and front. She appears to have an elongated body, slender waist and shortened legs; it could be argued that she was designed to be placed on a slender high throne and to be viewed from below.

Prajñāpāramitā, Muarajambi, Sumatra

During excavations in 1978 (Jambi Archaeological Heritage Conservation Centre 2012), a sculpture of Prajñāpāramitā without head or arms was found at the site of a terraced pavilion known as Caṇḍi Gumpung. My personal observations in 2012-2013 suggest that the statue was placed on a high stand to be seen in the round, on a platform at the front of Caṇḍi Gumpung. The sculpture now sits in a small site museum, placed in a corner with her back against the wall. As the statue was carved in the round, the sarong and sash are also depicted in careful detail on the reverse of her body. Unusually because of this, her hair is visible and shown falling in long curls down her back. Also seen on the reverse is a lotus flower stalk, which clearly indicates this statue was attributed with the ubiquitous lotus plant of the Singhasāri period. In the site report, the only mention of the Prajñāpāramitā was that the statue found in Caṇḍi Gumpung was thought to date to 1300. Prajñāpāramitā appears Javanese in style, but the statue does not appear to be made by the same hand as the Jakarta image, nor necessarily during the same period (*ibid*.). Suleiman (1981: 22) records the Prajñāpāramitā shortly after visiting the site in 1981; she describes her as the 'style of Singhasāri, which is not surprising as Kṛtanāgara paid special attention to Jambi by his sending of the Amoghapāśa image in 1286'. In note 66 she suggests the dress of this image is



Figure 9. Prajñāpāramitā, detail of cloth on lower body, Muarajambi, Jambi. Photo: L. Pullen.



Figure 10. Prajñāpāramitā, bow on the reverse of the body, Muarajambi, Jambi. Photo: L. Pullen.

comparable to the Jakarta Prajñāpāramitā, but also that it is still a question as to whether she was made on the spot from the area of Bangko or Rambahan, where volcanic stone is readily available (*ibid.*: 29).

The Muarajambi image displays three distinct textile patterns: the main *kain* (sarong) displays a four-petal lotus flower within a double roundel; the *sabut* (sash) pattern depicts a scrolling vine interjected with a naturalistic lotus flower (Figure 9), the pattern also appearing on the bow at the back of the body (Figure 10). The sash lays over her hips and ties off at the waist at each side of the body. The carving of the patterns on the kain and on the front folds appears incomplete (Figure 11). The pattern on the front folds differs to the main area of the kain, and is suggestive of a border pattern, and more closely resembles the patterning of the bow at the back of the body. The border pattern displays a design of stylized floral triangles, possibly meant to represent a version of the *tumpal* or *pucuk rebung* (bamboo shoot) motif (McIntosh 2012: 205). This triangular pattern is a traditional motif in the patterning of *limar* (weft ikat) silk textiles, which are

synonymous with the textile tradition of Palembang in Sumatra, and also seen in Khmer or Cham hol (weft ikat) made for the Thai court (ibid.: 175). McIntosh (ibid.) has described this end motif as similar to patterns that adorn the ends of Indian trade cotton chintz commissioned for consumption in Siam. The similarity of the patterning of the border of the *kain* of the Muarajambi Prajñāpāramitā (especially visible on the bow in Figure 10) and the evidence of border patterns on Malay and Khmer weft ikat textiles is too strong to avoid (Figure 12). It is clear that this textile was probably inspired from a cloth or a series of different textiles that were traded into the region and replicated onto the stone statue.

The detail carving of the image varies considerably, from the precise scrolling lotus vine of the sash, and the *pucuk rebung* motif of the border on the bow at the back of the body, in comparison to the rather simplistic lotus roundels of the kain over the figure's legs, the pattern of repeating circles, with its geometric emphasis. It is quite possible that in Sumatra the only looms were body tension looms, on which complex brocade fabrics could be woven, just as they are today. My research into the subject of loom types was carried out over a four-year period in Sumatra between 2012 and 2016. This sash pattern is, however, replicating an imported type of fabric.



Figure 11. Prajñāpāramitā, detail of cloth on lower body, Muarajambi, Jambi. Photo: L. Pullen.



Figure 12. Kain limar cual, Bangka Island, Sumatra. late nineteenth century, private collection. Photo: L. Pullen.

The motif on the sash over the hip cloth displays a pattern depicting a very naturalistic lotus flower or *padma* in a scrolling vine motif, which is very cleanly and precisely carved. This water plant is associated with divinity throughout the ancient world, as Mahāyāna Buddhism developed, and with anthropomorphic representations of the Buddha. These began to appear in India and elsewhere in Asia, especially in China, where lotus flowers in conventionalized disk-form or roundels were also shown in naturalistic or stylized form (Rawson 1984). This is an unusual motif, not seen in any existing Indian or Javanese textiles, although it is a popular design in Buddhist iconography and Chinese ornament. Rawson (*ibid.*: 81-88) has described the evolution of the lotus and peony scrolls in the Southern Song to Yuan periods.

Reichle (2007: 67) suggested that this image of Prajñāpāramitā does not appear as finely or precisely carved as the Jakarta statue. In my opinion, the carving of the pattern on the hip cloth remains unfinished, but the sash is very finely and precisely carved. According to Reichle (2007), the Muarajambi image was possibly made by a sculptor familiar with the sculpture of the Singhasāri period. However, the statue was most likely not made in East Java and subsequently shipped to Sumatra as has been previously suggested (Fontein 1990: 160; Sri Hardiati 2009: 78).

The pattern on the *kain* is a four-petal flower in a double circle, each circle touching to create a diamond pattern as the infill motif. This type of patterning was known across Asia for centuries (Jacqueline Simcox, personal communication, 8 November 2012). The lower edges of the *kain* lie on the *āsana* in neat folds and completely cover the lotus cushion. At this point the pattern fades away except for a few eight-petal rosettes and the beginnings of the pyramid border motif, which is very reminiscent of this border on a *limar* from Palembang or perhaps Bangka Island in Sumatra (Figure 12). It is also similar to the *hol* from Khmer textiles (McIntosh 2012: 175, 205). These patterns bear no resemblance to the design displayed on the top of the knee but do appear on the large bow at the back of the body (Figure 10). The roundels on the knee also display a certain lack of sophistication in the execution and appear unfinished. Suleiman (1981: 16) debated the Prajñāpāramitā at Muarajambi and stated that the pattern of the cloth 'resembles that of the first king of Majapahit, Keṛtarājasa Jayavardhana'.

Peter Sharrock (personal communication, 11 Dec. 2012) suggested that these sculptures were part of a wider cult of Prajñāpāramitā; as the goddess of transmission, it made sense for her to be situated at Muarajambi, an important center of Buddhist learning. Reichle (2007: 67) also refers to the widespread evidence of the worship of Prajñāpāramitā throughout Java and Sumatra. The stylistic similarities perhaps suggest closer political, religious and artistic ties in the region.

Defining style

Similarity in style seems to have been the deciding factor in determining the dating and relationship of these two images. In addition to stylistic similarities, related events have influenced interpretations of their origins. For example, as it is known that Kṛtanāgara sent an image of his father as Amoghapāśa to Sumatra, scholars have assumed that the Muarajambi image of Prajñāpāramitā was also made in Java and sent to Sumatra (Chutiwongs 2004: 116; Reichle 2007; Sri Hardiati 2009), and assigned both images the label of Singhasāri 1300. Therefore, it has been generally suggested that they came from the same workshop in east Java. This is unlikely, however, as there remains no inscriptional evidence of such a statue being gifted to Malayu-Jambi.

The detail of these sculptures, which are not covered by strict iconographic rules, shows a profusion of ornaments which are very similar, but it is in the patterning on the dress where they differ. Gombrich (1998: 150) wrote that '...style is any distinctive and therefore recognizable way in which an act is performed, or an artefact made, or ought to be performed and made'. As the head of the Muarajambi sculpture is missing, it is difficult to use the generally known method of determining style when

considering sculptures of the same period, by observing the posture of the image, the dress and jewelry, and the material from which they were carved, and any other small tell-tale details. Future research will be conducted to establish the origin of the volcanic stone the Muarajambi image is carved from. Once this is completed a clearer picture as to the origin of this important statue may be resolved.

The 'stylistic' features of all existing sculptures dated to the thirteenth century AD vary considerably, with no one substantial theme being the same; for example, the statues of the tower-temple (*Cungkup* temple) of Singosari stand in a more realistic manner, compared to the rather stiff upright stance with no flexion in the body seen in those of the Majapahit period (Stutterheim 1932: 48; Klokke 1994: 179). The way the lotus is depicted growing naturalistically from a bulb at the side of the body in the Singhasāri period varies compared to the Majapahit, where the lotus is generally seen growing stiff and straight from a pot. Stutterheim (1932: 47; Lunsingh Scheurleer 2008: 325) proposed that the lotus pot appearing at the side of each sculpture was a way of stylistically dating images of the thirteenth to fifteenth centuries, however this has not always proved to be a completely fool-proof means of dating.

Gombrich (1998: 151) wrote that if 'style' is used descriptively for alternative ways of doing things, the term 'fashion' can be reserved for the fluctuating preferences which carry social prestige. The latter term can easily be related to the differences between the two sculptures, where local fashion and regional trends or influences might have played a part. Even though these two sculptures have been stylistically attributed to 1300, we still have no concrete evidence to say they were made in the same place or indeed at the same time. In my opinion, international influences certainly played a key part in the style of these images. For example, a sculpture at the Troppenmuseum in Amsterdam believed to represent the Singhasāri King Anusapati (r. AD 1227-1258) was found at Candi Kidal in East Java. Lunsingh Scheurleer (2008: 287) argues that this sculpture stands in a stiff pose more reminiscent of the Majapahit style, mentioned above, than of the more fluid pose of the Singhasāri sculptures, such as the Prajñāpāramitā from Candi Singosari. She also suggests that a provenance from the Singosari site is not enough to attribute a date to this period (*ibid.*: 290). Precise analysis and dating of the Muarajambi Prajñāpāramitā to Candi Gumpung, after its discovery there in 1975, has been very weak; according to Lunsingh Scheurleer (*ibid.*) this does not necessarily place the statue as being stylistically connected to this time and period. As we have no other Buddhist images of bodhisattvas with which to compare, we have to look to the history of the later years of the Śrivijaya period in Sumatra.

Trade patterns

The Zufanzhi was written around 1225 by Zhao Rugua and describes overseas countries and trade of goods from China to countries in the Southern Ocean. A place referred to as *Boni* by the Chinese was situated forty-five days from *Shepo* (Java), and forty days from *Sanfoqi* (Jambi), based on constant winds. A description is given of the type of people encountered on arrival at *Boni*: 'women from rich households all wear pieces of colored brocade or silk, the color of melted gold, wrapped around their waist' (Kurz 2011: 8). There is also a description of a country that is the neighbor to *Dimen* (Timor), where foreign traders barter with forest products, and trade gold, silver, fake silk brocade, *jianyang* brocade, multi-colored silk threads, glass beads, etc. Three days after the arrival of the merchant ship, local dignitaries boarded the ship, whereupon brocade cloth was spread over the gangplank, and they were welcomed (*ibid.*: 9). This brief picture is followed by a description of the festival of the Buddha, housed in a reed-covered building of several stories built like a pagoda, over a small shrine which sheltered the Buddha (*ibid.*: 10).

This was a transcultural world where all islands and communities were connected, and trade reached all the regions of island Southeast Asia, as a result of which trade goods that went to one island probably ended up in all the island communities. Hall (1985: 256) describes the moment after the

establishment of the Yuan dynasty in AD 1274, when the port-polities on the Sumatran coast applied for recognition, to fill the gap left by Śrivijaya's ports of trade. In 1271 Palembang sent tributary envoys to the Yuan capital, followed in 1281 by Jambi-Malayu. In 1275 Kṛtanāgara of the Singhasāri dynasty in East Java sent an expedition to Jambi-Malayu to exert his suzerainty over the region, but in 1286, to counter the actions of Jambi-Malayu trying to align themselves with the Yuan, he sent an icon of his father as Amoghapāśa Lokeśvara with a dated inscription, and had it placed upstream in the Batanghari River which flowed into Jambi-Malayu. Prapañca also described this event (Robson 1995: 54, canto 41.5).

The result of this action led the Yuan ruler Kublai Khan to attack Kṛtanāgara, who was killed by local forces before the Chinese could attack (Hall 1985: 256; de Casparis and Mabbett 1992: 326). As a consequence of these actions and series of events, the erection of the Muarajambi Prajñāpāramitā is probably more influenced by Buddhism from Yuan China, to whom they paid homage, rather than by Singhasāri, who tried to claim suzerainty over them. The evidence discussed above of the types of brocades and silk and gold textiles that were traded in the region demonstrates that a large quantity of Chinese fabrics was traded to local rulers all over the islands of Southeast Asia.

By the thirteenth-fourteenth centuries, new regional powers had emerged in the region. Sukhothai and then Ayutthaya expanded their military presence into the Malay Peninsula, eventually reaching the Straits of Melaka (Taylor 1992: 175). Perhaps this change in the control of political power in the region enabled the emergence of a Thai/Khmer/Malay textile style to emerge, such as is depicted on the Prajñāpāramitā at Muarajambi. Textiles originating from Cambodia such as *hol* and *limar* from Sumatra, both in weft ikat, show a border motif as seen on the Muarajambi sculpture (Figure 12). Very soon after this period, Malayu-Jambi lost control of the region and the center of power was with the Majapahit in Java, and by the fifteenth century power shifted to Melaka. During the fifteenth century, Islam was adopted by the rulers of Melaka and the emergence of Islam marked the beginning of Malay history. There is no further record of any sculptures having been made in the Malay world (*ibid.*: 176).

Textile trade

The design of India's historical textiles reflects a meeting of two streams, the order and geometry of Islamic decoration and the naturalism of India's ancient arts (Jain 2011: 1). This combination produced a vast variety of different techniques and types of cloth, whereas in Java and Sumatra in 1300 our knowledge of textile production is limited. We know that textiles were traded into the region for centuries from India (Wisseman Christie 1999: 228) and China (Wheatley 1959: 19). It is also quite likely that hundreds of bolts of Chinese silk were sent by ship along with ceramic cargos from Yuan China to Sumatra and Java (John Guy, personal communication, 19 Sept. 2012). During the Sung dynasty, the Śrivijaya thalassocracy had its capital in Malayu-Jambi, which undoubtedly became a center for trade. The Chinese traded gold and silks for exotic products, but they also imported from Java a textile known as brocade (Wisseman Christie 1991: 14), but we currently have no knowledge of these textiles.

As well as the textiles themselves, patterns moved from west to east and *vice versa*, and there was a natural spread of designs that evolved and changed depending on which society made use of the motifs from traded cloth. Patterns were often modified into something else, which became unrecognizable compared to their original source. The sculptures and texts such as *sīma* tax transfer charters dating from the early ninth to late fifteenth centuries, tell us what was being presented at ceremonies and used by the royal and elite members of society during this period (Wisseman Christie 1993: 181).

Throughout Southeast Asia it is the commonly-held view that craftspeople travelled, and that they would have probably been employed on-site where a sculpture was needed, which was thus carved *in situ* in the field. Could the Muarajambi image have been carved with Buddhist imagery as a way of reenforcing the religious affiliation of the patron in the wake of Islam? As we have no extant examples of textiles from this period of the Malay people, we have no way of knowing what the model for this pattern could have been, but Tibetan and Chinese Buddhist, and Thai/Khmer influences were undoubtedly strong. The issue of dating sculptures by their style and patterns is indeed a dilemma; because of this, it is difficult to know who influenced who as regards to the patterns on the Prajñāpāramitā sculptures.

Indian and Chinese examples

Rawson (1984: 53) has written extensively on Chinese ornament and discusses borders of rosettes enclosed by lotus petals and the widespread use in Central Asia of Mediterranean ornament. A second to third century AD Gandharan stone fragment in the British Museum depicts this motif, in which the lotus petals are divided by a small fillet. A fragment of a wooden beam from Loulan, dating to the third-fourth century AD, also in the British Museum, provides another re-working of this ancient design (*ibid.*: 54-56). However, these few examples do not by themselves prove that the lotus or rosette motif on the base of the Jakarta image (Figure 13) and the *kain* of the Muarajambi image (Figure 10) are actually related to Buddhist iconography. What they do show is the continued use of ancient patterns that date back to early Mediterranean designs, which were transmitted to Indonesia via Central Asia, India and China. Motifs such as these were used on architectural detail for centuries and became absorbed into sculpture and textile motifs.

For example, the small eight petal stylized version of the lotus flower that appears scratched on the lower edge of the *kain* on the Muarajambi image, and which is displayed around the square base (*socle*) of the Jakarta image, where it is interspersed with small upright architectural details (Figure 13), also appears as a motif of scattered flowers within the garlands on the great stupa at Barhut (Sunga period, second century BC), and on a number of Gandhara Buddhist sculptures around the base pedestal (e.g. images in the Gallery of New South Wales, Canberra, inv. 85.1986). The *Dharmachakra* at Nakhon Pathom (National Museum Bangkok) display lotus flowers and a four-petalled flower in a lozenge, dated to the ninth century. This motif is known as *prachum yam*, which develops into a particular Thai style motif (Krairiksh 2012: 67). This enduring pattern is also seen on the pillars of Cave 1 at Ajanta, western India (fifth-seventh century AD), where a lotus flower is divided by a lozenge (*ibid*.).

Is it possible to draw some parallels with these examples to see how these motifs are carved on the Buddhist sculptures of Prajñāpāramitā in Java and Sumatra as symbols of Buddhist art? The small eightpetal flower of lotus is seen on the ends of the bow at the back of the body and the unfinished folds at

the front of the *kain*. The lotus scroll motif on the *sabut* of the Muarajambi (Figure 9) may be a Yuan Chinese ornament design. In China, the history of flower-scroll patterns using elements imported from Central Asia illustrates the tenacity of this ubiquitous design, which evolved from a simplified acanthus or half-palmette to a lotus, and that this was a response to the demands of Buddhism. By the Tang dynasty (AD 618-906) a fashion for the peony was incorporated into the repertoire of the makers of all medium of plastic arts (Rawson 1984: 64-65). A study of Northern Song (AD 960-1279) and Yuan (1206-1378) ceramics shows us the somewhat consistent use of this distinctive motif of a flower scroll with lotus or peony (*ibid*.).



Figure 13. Detail of base of Prajñāpāramitā, Museum Nasional Indonesia, Jakarta. Photo: L. Pullen

Rawson (1984: 88) wrote that craftspeople were unlikely to seek new designs for ornaments that perhaps represented real life but were more likely to re-appraise existing designs to suit the religious or fashionable requirements of the time. This period in Chinese history is contiguous with the thirteenth century period in Java and Sumatra under discussion here. Textiles from the Song and Yuan period often display a consistent use of the naturalistic treatment of flowers with tendril peony and lotus scrolls (J. Clarke, personal communication, 13 Dec. 2012).

This paper proposes that the *sabut* of the Muarajambi image could represent a brocade or silk tapestry weave as seen in China. At the time of Tang China through to the Yuan period a high level of weaving technology was attained. Jon Thompson (personal communication, 12 Nov. 2012) stated that the motif on the two images discussed here can only possibly be meant to replicate a fabric made with a complex loom, a type that was only known at that time in west Asia, India and China, and not found in Sumatra or Java. However, as noted above, the body-tension loom in Sumatra was capable of weaving complex brocade fabrics.

There is very little record of Indian or Southeast Asian textile production preceding the late medieval period; what we do know has survived in historical texts, literary works, travelers' notes, temple inscriptions and cave paintings such as remain at Ajanta, Grotto 1 (Okada 1995). However, the most important remains of textile history are in the sculptures themselves; a general survey by personal observation of many Indian bronze sculptures reveals a small number of textile patterns. Bronze sculptures display only a limited repertoire of patterns, but it is possible to identify a Chola bronze from its iconography, body posture and its textile patterns. Based on this stylistic analysis and placement of a textile pattern into a period in history, it is possible to place the textile patterns on the two Prajñāpāramitā and make suggestions as to what they might have been representing.

Conclusion

It is my contention that the Muarajambi sculpture was carved in Jambi during the last stages of the Malayu period (eleventh-thirteenth century), probably sometime between 1250 and 1300. More work is needed on volcanic stone analysis to determine its origin. This would, hopefully, show the sculpture was not sent to Sumatra from Java as has been previously assumed. However, in the case of the Jakarta Prajñāpāramitā I propose a date earlier than the current suggested date of 1300.

Even though the Jakarta image has been stylistically thought of as superior to the Muarajambi image, more pertinent is the fact that the patterning on the sash of the Muarajambi image is of far higher quality and distinctly different. As a result of this, I suggest these two images bear no direct relationship to each other. In order to analyze what possible external influence perhaps inspired the designs of the two textile motifs, research on the influence of Yuan Chinese and western Indian textile motifs is required.

The Muarajambi statue appears dissimilar to the remaining images of Prajñāpāramitā, which suggests that she bears little relationship to the remaining images *in situ* at Singosari, or to King Kṛtanāgara. Trade with China was not open and free to all merchants, but it was restricted to the 'tribute' missions sent to the emperor by the 'vassal' rulers. As a result of this, the rulers of Palembang and Malayu-Jambi became exceptionally rich through this system of trade, thus the local maharaja's immense wealth enabled him to reward his followers (Hall 1981: 71). Perhaps the Muarajambi Prajñāpāramitā was intended to be placed in a small shrine in front, where the remains of a brick platform can be observed, rather than on top of Caṇḍi Gumpung. However, the carving of the patterning in the round, on the sarong and sash of the Muarajambi statue do not follow any prescribed principles, but reflect Thai/Khmer weft ikat and Yuan Chinese textile patterns. In the Jakarta statue, the patterns appear to echo Yuan Chinese textile and ceramic patterns that were perhaps known in Jambi and in Java at that time.

Consequently, to understand exactly what the influences might have been that inspired the creation of these two images is problematic. The suggestion that there was a Chinese Buddhist stimulus at this time in the form of imported objects that might have inspired local production and design seems possible. It is hoped that by the close analysis of surface decoration, we can contribute towards distinguishing areas of production for the body of classical east Javanese and central Sumatran stone sculptures, and through the examination of distinctive types of sculptures and design motifs, to begin to visualize the possible textiles in circulation in thirteenth-fourteenth century Indonesia.

Acknowledgements

The research reflected in this paper forms part of the author's PhD dissertation under the supervision of Elizabeth Moore at SOAS. I thank my supervisor for her continued support and guidance, and Peter Sharrock at SOAS for his advice on Buddhism. For other assistance, I thank Jon Thompson and Jacqueline Simcox for their generous input and for their ideas on Chinese and Central Asian textile production, and John Clarke, Curator of Himalayan and Southeast Asian Art at the Victoria and Albert Museum, for his advice on Tibetan Buddhism and Yuan Chinese design.

Islamic calligraphy, re-interpreted by local genius in Javanese mosque ornamentation, Indonesia (fifteenth century CE to present)

Hee Sook Lee-Niinioja

Sacred Javanese mosques in Indonesia are believed to have taken over pre-Islamic sources, resulting in various syncretic forms. Accordingly, mosque ornamentation should be investigated as to whether its idea and form were inherited from the local tradition or the new arriving one. To examine how these were formulated in mosques, a broad view of the mystical ideas in animism, Hindu-Buddhism, and Islam should all be taken into consideration. The political and religious Islamic movement in Indonesia can be divided into three periods: continuation of pre-Islamic influence to the transitory period (fifteenth century-1619 CE); European and Islamic influence during Dutch colonization (1619-1945 CE); and pure Islamic movement in the contemporary period (1945-present). Each period created syncretism – parallelism, adaptation, and creation – between pre-Islamic and Islamic cultures, based on mutual tolerance and flexibility. This paper examines this issue by looking at Islamic calligraphy, brought by traders and missionaries in the fifteenth century, in Javanese mosque ornamentation.

Islamic art and architecture in Southeast Asia

Today, Southeast Asia including Java represents almost one-quarter of Islam's global community. Islamic civilization is inextricably linked to the message of the Prophet. Since its advent in Java in the early fifteenth century CE, Islam has not only changed local cultural landscapes, but also created a unique regional heritage. One might ask why a characteristic regionalism developed in this archipelago. Was it due to the awareness of continuing pre-Islamic Javanese cultural heritage? The geographically long distance between the Arab world and Southeast Asia reduced the direct influence of Islamic centers on this region at the beginning (Bennett 2005; Bennett, interview 2006).

As pre-Islamic traditions underline the form and setting of sacred places, mystical Sufis, in practicing contemplation and ecstatic states to reach communion with the Divine, borrowed them, based on their belief of mosques to be holy. They created a combination of indigenous and Islamic ideas and forms in mosque architecture (Tjahjono 1998). For instance, until the late nineteenth century, mosques were constructed in a vernacular style with Hindu-Buddhist multi-tiered roofs, using mostly wood to accommodate local conditions (Noe'man and Fanani, interviews 2005). A three-tiered roof symbolizing 'Cosmos Mountain' (Meru) as an essential part in animistic and Hindu-Buddhist societies came to represent an Islamic idea of approaching Allah through three mythical paths – Insan (faith), Ihsan (charity), and Islam (submission) (Tjandrasasmita, interview 2005). And soko guru (the primary four columns) signify the spiritual context of the vertical unity between Allah and his believers; these forms continued from the Hindu belief in the identity of self and the universal soul (Isnaeni 1996).

Moreover, the persistence of indigenous buildings had to take into account the local profusion of natural resources and variable climates, and resulted in exuberant and diverse architectural styles. Elements associated with Islamic architecture elsewhere, such as the dome and geometric ornament, do not feature in these traditions. Multi-tiered roofs are the most suitable for tropical weather with heavy rain and humidity (Noe'man and Fanani, interviews 2005). Soko guru supports the uppermost roof, separating it from the double-layered outer roof, to admit light and to allow ventilation of the prayer hall (Bennett 2005).

According to a Malay perspective, art is likely to function as delight and purity. The main difference between Islamic art and Malay art is the level of religious value inherent in the artifacts. Despite the influence of pre-Islamic beliefs and art forms on the pattern of life in Southeast Asia, the bond between Islam and the local culture has been steadfast, because existing influences encouraged Malay people to accept Islamic ideologies, leading to the development of distinctive regional art. The concept of the 'Godliness' of the ancestors and the primary aesthetics of cosmological belief in the Malay world were penetrated into Islamic cosmology in a form of syncretic culture (Yatim 2005).

It is known that the avoidance of figurative representation separates Islamic art and architecture from the Hindu-Buddhist aesthetic style. Nevertheless, in this region, Islamic art needed to reconcile the ambivalent relationship between the two religions, caused by the ruler's indigenous belief of the magic in the art (Bennett 2005). The close tie between the rulers and Islam was spatially symbolized by placing Javanese palaces adjacent to the grand mosque and the town's center. The common heritage in many mosques reflects political relations between Muslim rulers in different regions. Shared features are the tripartite division (base/body/superstructure), a centralized plan, multi-tiered roof, soko guru, mutsaka (lotus crown of the roof), outer colonnade, serambi ('veranda'), a courtyard with two gateways, a drum for calling prayer, and a graveyard (Fontein 1990).

Consequently, the depiction of non-Islamic images, such as the Hindu deity Ganesha or zoomorphic and anthropomorphic symbols combined by Koranic calligraphy, was to be understood in the context of the earlier animism of ancestor worship. This method was intended to represent non-Islamic images fitting into an aesthetic attitude tolerable to Islamic orthodoxy. In the syncretic process, armed Ganesha resembled Ali's sword, discarding his Hindu iconography. This change suggests a transformative possibility. Another device was the metamorphosis of foliage into a figurative form, as seen in a stone panel of the Mantingan mosque (established 1559 CE), where leaves and tendrils became the shape of a monkey. *Makaras* (a fish with an elephant trunk), disguised as foliate scrolls at Central Javanese temples, are also seen in the decoration of a ceremonial boat prow in Islam, signifying protection and richness (Bennett 2005).

The preference of emblematic depiction brought a potentiality in ornamentation. Narrative realism was replaced by vegetal patterns, such as 'meandering clouds' whose endless spiralling floral and foliate scrolls form a visual dynamism. The shift from figural representation to frame decoration achieved its finest expression in the illuminated manuscripts, batik, and sculptured wood (Yatim 2005).

In Islamic ornament, calligraphy is awarded a status higher than arabesque or geometry. Characteristically, in Java, megalithic geometry and Hindu-Buddhist scrolls were likely assimilated with Islamic geometry and arabesque, respectively, which became popular in the contemporary period. As the medium for transmitting the words of the Koran, Arabic script played a spiritually unifying role. It was placed in a unique position among Muslims, regardless of their ethnic or social backgrounds. In Southeast Asia, calligraphy was more often used in decorating illuminated manuscripts, rather than the exploration of sophisticated calligraphic styles. The blessed Islamic phrases are to be read for their association with the grace of the Koran, and inscriptions are perceived as potent images of blessing and protection. The image of talismanic textiles suggests the influences of Sufi metaphysics (Rogers 2005).

Among many types of motifs, Hindu-Buddhist fauna and flora, Islamic geometric interlace, calligraphy, and the winged gate appeared in early Javanese mosques. Hindu-Buddhist *kala* (lion)-*makaras* and floral themes seemed to be seen most frequently, particularly the lotus flower. *Kala*, interpreted as 'time', 'death, or 'black', is a name given to a demon's mask mounted above doorways and niches in Hindu-Buddhist temples with *makara*. They often appear in mosque mihrabs. Regarding floral themes, Islamic poets describe a flower as a book, where one can study the knowledge about Allah. And its combination

with birds can be considered as characteristic of Islamic Javanese decorative art, despite a ban by the *hadith*, the sayings of the Prophet. Interestingly, the winged gate was neither found in Hindu-Buddhist nor Islamic culture. However, as a messenger bird (*garuda*) of Vishnu in the Hindu myth, the motif could be a Javanese invention at the beginning of Islamization (Marwoto 2003). The reverence for the bird in Indonesia might refer to a much earlier bird cult.

The expression of faith in art and architecture articulated the creed of Islam and produced the complexity of regional variations (Bennett 2005). Two factors can be argued to create this regionalism: (i) The Malay people, living in a spirit of tolerance, flexibility, and openness were able to accept changes through careful selection, reflection, and modification without discarding their wealthy cultural traditions. They witnessed Hindu-Buddhist, Chinese, Islamic and western cultures, which had a great impact on their lifestyle; (ii) The arrival of Islam in the archipelago coincided with an era of zealous spiritualism in the Islamic world. Sufi mysticism had first appeared in Persia, and following the Mongol seizure of Baghdad in 1258 CE it rapidly spread through international trade routes (Yatim 2005). As the Sufi precept of 'universal toleration' could negotiate with pre-Islamic culture (Bennett 2005), the new Malay identity was quickly expressed in Malay art, to affirm the 'oneness in Allah' (*Tawhid*), the indivisible oneness concept of monotheism in Islam. Artists drew inspiration from a diverse heritage and chose to transform existing symbolism following Islam (Yatim 2005).

Van Leur (1955) underscores that Indonesian history must be understood in its own terms and not in those borrowed from other cultures. In this regard, the Indonesian architecture historian Prijotomo (1992; interview, 2004) underlined: 'We are Javanese; then, our religion is Islam.' Islamic art became an extension of rather than a radical change from earlier aesthetic traditions. The comments raise a question: what is the unique Javanese attitude to Islamic culture?

The answer is that Java was the center of the universe before the arrival of Islam, but on facing Islam, Java was aware of its limit. To keep a religious balance, the Javanese Muslims had to localize orthodox Islamic culture within continuing traditional symbolism, so they could feel that the center would not have to shift so radically (Kusno 2003). As a result, the construction of the syncretic mosque of

Agung Demak (established 1479; Figure 1) is likely to represent the power of the new faith in Java from the viewpoint of Islam, but Islam became localized and incorporated to become an element within the larger cultural framework of Java from the Javanese perspective. Java was not merely part of Islam, but Islam was part of Java or Javanese life.

Pre-Islamic and Islamic Java

The huge Indonesian territory demonstrates a variety of cultural expression, yet throughout history the country has taken elements from each civilization through their contacts abroad, but never adopted other cultures completely. Instead, Indonesians blended



Figure 1. Agung Demak, Demak, Central Java (established 1479 CE). Photo: H.S. Lee-Niinioja.

imported elements into existing circumstances, in order to create their own characteristic culture, with notable geographic variations (May 1998).

Indonesia has a population of *c*. 270,000,000 (Indonesia population 2019, viewed 26 November 2019, <http://worldpopulationreview.com/countries/indonesia-population/>). Its ethnic structure falls broadly into two groups, the Malayan and the Papuan, with subdivisions, due to numerous immigrations many centuries ago, largely from Asia. The Chinese constitute the majority of the 'non-indigenous' population, and minorities of Arabs and Indians exist. Today almost 90% of the population is Muslim, making Indonesia the largest Islamic nation in the world. The most important islands culturally and economically are Java, Bali, and Sumatra, where the tropical climate, rich rainfall, and fertile soils provide for abundant agriculture (Koentjaraningrat 1990; Rutherford 1996).

Indonesia came under the influence of Indian civilization mainly through trade and Buddhist missionaries already in the fifth century CE. Still, it was in the eighth century that the Sanjaya and Sailendra kingdoms were founded in Central Java, erecting Hindu and Buddhist temples, while the Sriwijaya kingdom ruled Sumatra. Around 930 CE political power shifted to East Java, and the Hindu kingdoms of Singasari and Majapahit arose, covering vast areas of the Malay Peninsula. Under Majapahit in the middle of the fourteenth century, the country experienced the most golden period of the whole of Indonesian history, and the temple complex of Panataran (1197-1454 CE) in East Java testifies to its magnificence (Rutherford 1996).

Muslim traders arrived earlier, in 1082 CE, and gradual penetration of Islam began. By the end of the sixteenth century, Islam replaced Hinduism and Buddhism as the dominant religion. The first Islamic kingdom of Demak in 1479 CE was established on the coastline (*pasisir*) in northern Java after the conquest over Hindu Majapahit, and many foreign Muslim traders settled down in harbor cities in the fifteenth century. During the second half of the sixteenth century, political power shifted to Central Java where the Mataram kingdom (1587-1755 CE) was founded. Mataram was Islamic, but patterned itself after the great Hindu Majapahit, and practised mystic animism, Hindu-Buddhism, European pomp, and Islamic circumstance (May 1998). Identifying with the prestigious Majapahit royal house was of considerably greater significance than religious solidarity with the coastal powers (Rutherford 1996).

European influences in the Malay Peninsula came with the arrival of the Portuguese, who captured Malacca in 1511 (May 1998) in pursuit of spice, and established trading posts. The Dutch expelled the Portuguese in 1596, and opened the United Dutch East Indies Company (VOC) in 1602. Becoming the leading power in Indonesia by the seventeenth century, they built Batavia (now Jakarta) as the capital of the colony. Two centuries later they finally controlled the whole area, although a break (1811-1818) took place when the islands were ruled by the British as a result of their victory over Napoleon. After a short occupation by the Japanese during the Second World War, Sukarno, as President, proclaimed an independent republic in 1945 (Rutherford 1996).

The Indonesian archaeologist Tjandrasasmita (interview 2005) suggests that the political and religious movement in Java can be divided into three Islamic periods: (i) transitory (fifteenth century-1619 CE), (ii) Dutch colonization (1619-1945 CE), and (iii) contemporary (1945-present). Each had a syncretic culture between local and Islamic traditions, according to mutual tolerance and flexibility. The steps involved were: (i) parallelism between old and new cultures, (ii) adaptation between the two, and (iii) creation of a new syncretic culture. Other categorizations list other divisions. For instance, the Indonesian architect Fanani (interview 2006) lists stage 1 (1100-1650), stage 2 (1650-1900), and stage 3 (1900-2000), given the Islamic ornament in Java.

Continuation of pre-Islamic influence into the transitory period (fifteenth century-1619 CE: Syncretism I)

Geographical isolation from the Arab world meant that Malay local culture had to be the only source for mosque architecture. Interviews in 2004-2006 with Indonesian scholars (some already cited above), such as Tjandrasasmita, Anbary, and Sedyawati, relate that Islamic art and architecture were brought by traders and religious teachers (ulama), not by people who dealt with culture, around the twelfth century. As foreign missionaries did not possess the skills of making Islamic ornaments, they focused on explaining the principles of the religion to local people.

Although a strong continuity of pre-Islamic tradition occurred, Javanese Muslims designated new functions and meanings to their mosques. Syncretic Islamic motifs were a creation of 'local genius' by modifying existing motifs within an Islamic context, as well as adopting Islamic ornament brought by religious missionaries. As a result, new regional ornaments, termed 'local Islamic' or 'Malay Islamic', differed from incoming Islamic ones. The term 'local genius' designates the ability of specific Southeast Asians, who could shape a foreign culture to make it suitable to local conditions, and thereby to create a new culture (Quaritch Wales 1948, 1951). To this process, Chinese motifs contributed partially (Fanani, interview 2006).

Consequently, mosques and graves on the north Javanese coast reveal new Islamic motifs, such as the heart-shaped leaf, geometric interlace, calligraphy, and the winged gate (Marwoto 2003). The heart-shaped leaf – a kind of Islamic arabesque – decorated mostly mosques and gravestones at Banten (established 1522-1570 CE) and Mantingan (established 1559 CE), while interlace and a poor execution of Arabic calligraphy appeared on gravestones, ceramics and mosques at Cirebon (established 1498 CE), Kudus (established 1537 CE) and Mantingan. Calligraphy was highly respected, and survived because it was a new motif for Javanese Muslims and a means of recording the Koran. Geometry and arabesque were assimilated into megalithic geometry and Hindu-Buddhist scrolls.

Regarding Islamic 'arabesque', Riegl (1893 (1992)) limited the term to a stylized form of the vegetal, which grows from one another infinitely in any direction, and considered it to be the original creation of the Arab spirit. In this context, Tjandrasasmita (interview 2006) underlined: 'If Muslim missionaries wanted to introduce Islamic architecture and ornament to Java, they could not do it at first. Java had already its own architecture, including a stepped roof and ornaments, based on its geographical and ecological experiences, which should be continued.'

European and Islamic influence during Dutch colonization (1619-1945 CE: Syncretism II)

Sources for inspiration during this period became Mecca and Medina. Religious leaders could visit Mecca and bring Islamic motifs back home. However, a lack of skills in adjusting them to local settings had to wait until the Dutch colonizers' engagement in teaching techniques of dome construction. During this time, the combination of dome and local serambi ('veranda') was introduced, as well as European motifs, such as palmette and color paints (Tjandrasasmita, interview 2006). Constant but lesser use of pre-Islamic ornaments is seen, while an outcome of new contacts between Java and the Arab world prompted calligraphy to become popular.

The pure Islamic movement in the contemporary period (1945-present: Syncretism III)

A standard mosque design, inspired by Agung Demak (established 1479 CE), was set up during this period. Any Muslim could travel and acquire sources from the whole world. Pan-Islamic ornaments were blended with the local tradition, creating the third syncretism of plurality. Muslims could interpret Islamic architecture and ornament to their tastes, since modern science and technology and the Islamic environment in daily life are closely related (Noe'man, interview 2004). Islamic arabesque,

geometry, and calligraphy replaced pre-Islamic ornaments, while flat roofs and the absence of mihrabs and columns became a trend. O'Neill (1994) argues that the absence of soko guru in the new mosque design denies the metaphorical role of linking the believers to Allah.

Moreover, during the period of President Soeharto (1968-1998), a traditional but strictly functional design prevailed in more than 400 mosque buildings throughout the country. The government-sponsored foundation *Yayasan Amal Bakti Muslim Pancasila* offered a standard design for mosque buildings in less advantaged areas: a basic plan with a three-tiered roof in three sizes (15, 17 or 19 m²). In the midst of this, a new consciousness to formulate a style which reflects regional flavor and diversity became stronger in reaction to globalization in building mosques, either traditional or pan-Islamic or combined, to preserve Javanese cultural heritage (O'Neill 1994).

Islamic calligraphy in Javanese mosques: delight and purity

When Islamization started in Java in the early fifteenth century, Javanese architects were free to interpret the essential requirement of a mosque building following their mediation in temples, because the introduction of the mosque and the idea of communal prayer were new in Java (Noe'man 2005). According to Yeomans (1999), the Koran has no message about art and architecture, in spite of being uncompromising to idolatry: 'Believers, wine and games of chance, idols and divining arrows are abominations devised by Satan. Avoid them, so that you may prosper' (surah 5:95). Moreover, the Koran contains a few regulations regarding the form of the mosque. People's urge to visit a place of worship is formed by their culture and practiced on the material level. Javanese Muslims thought that the mosque should be the most beautiful and lavish building, legitimizing a *hadith* (Sahih Muslim 1.93:91): 'God is beautiful and loves beauty' (*Inna Allah jameel wa-yuhibbu al-jamaal*). However, a deeper understanding of this thought warns against lavishness, and that superfluous ornament is a way close toward the devil (surah 12:27) (Noe'man, interview 2004).

In adorning mihrabs, the same idea seems to be applied. In an interview in 2003 with the religious leader of the Mansyur Sawah Lio mosque (established 1717 CE), the leader claimed that mihrabs in Jakarta are short of ornamentation for fear of disturbing worshipers' concentration on Allah. By contrast, the architecture historian Prijotomo (interview 2004), stressed that a beautiful mihrab is a strategy for encouraging non-Muslims to embrace Islam. As a solution, stylized forms in repeated geometric patterns were used in decoration, and Koranic verses in calligraphy became a means of communication in Javanese mosques.

Characteristically, several great Javanese mosques have a chronogram (*candrasengkala*), in which four digits together form a year of the Saka, within or above the mihrab. And a combination of *kala-makara* was located on the semi-circular shaped mihrab, sometimes with floral motifs. For instance, Agung Kasepuhan of Cirebon (established 1498 CE) has elaborate decoration, with a suspended lotus flower inside the vault of the mihrab, and the *surya* (sun) representing power and supremacy. *Surya* symbolizes the glorious Hindu Majapahit kingdom in Southeast Asia, and incoming Islamic culture inherited this tradition to mark its religion.

Isnaeni (1996: 175-176) argues that in a sacred Javanese mosque, the lotus and the *surya* signify fundmental aspects of life: 'embodied immortal and religious duties' (lotus flower), and 'the perfect attainment of spiritual insights towards victory in the after-life' (*surya*). Islam underlines Muslim duties in social and spiritual relationships; without performing their duties, Muslim rights are not respected. In this context, the relationship between Islamic principles and the images of the lotus flower and the *surya* becomes clearer. During the author's fieldwork in 2004, Islamic calligraphy was found almost on the mihrab, either carved in wood, written directly on the wall in paint, or embroidered in textile with a glass frame.

A mihrab is the focus of religious symbolism in mosque architecture. Technically and theoretically, it could be a visual identification of the *qibla* wall. But proper belief shows it as a shrine for divine illumination and as the gate to Paradise (Hillenbrand 1994). As the mihrab is said to be the gateway to Paradise, does the preference of having Islamic calligraphy on the mihrab have the intention of strengthening Javanese Muslims' faith in Allah, despite sacred pre-Islamic motifs as a vehicle? Or is it meant for visual pleasure among aesthetic Javanese people regarding their cultural heritage? Before addressing this, the basic understanding of Islamic calligraphy needs explanation.

Recite in the name of thy lord who created Created man from a clot; Recite in the name of thy lord, Who taught by the pen, Taught man what he knew not (The Holy Koran, surah 96:1-5)

The only true novelty in Islamic ornament is calligraphy. As the most potent means of expressing Allah's message, Islamic calligraphy became a major vehicle for aesthetic energies and symbolic meanings, because the word of Allah is recorded in the Koran (Jones 1978; Grabar 1987). Muslims understand that the use of a fine script (*kalle*, beautiful; *graphe*, writing) is not only their religious duty, but also the most appropriate ornamentation for a mosque building (Davies 1982). Forms and styles of calligraphy should be learned to underline epigraphy as a dominant factor in Islamic ornamentation. Its advantage lies in the variety of styles, depending on the nature and context of texts in different periods (Burckhardt 1980). Holy inscriptions are typically placed where any Muslim viewer can see them and learn them by heart, while an amalgam of lettering, texture, color, and inscription embellishes the building (Hillenbrand 1994).

Two main styles of calligraphy were developed: (i) the script is known as *Kufic* from the name of the city Kufa in Iraq in the seventh century CE, and (ii) *Naskh*, a word derived from 'to copy', whose meaning is almost equivalent to 'cursive'. *Kufic* is a rectilinear and angular form that is suitable for a specific aesthetic intention and scope, customarily used in the Koran. Up to the twelfth century, it was the only script utilized in decorating mosaics and carved stones, due to its monumental character, easy transposition into different materials, and straight lines and empathic uprightness. The first use of epigraphic decoration was in the Dome of the Rock in Jerusalem (established 685-691 CE) (Papadopoulo 1988), and the purest angular *Kufic* scripts were used more in minarets and mosques; ornamental *Kufic* can be found on any type of surface (Davies 1982).

Naskh, a cursive form of writing, was invented by Ibn Muqla (886-940), and acquired its status as a major script at the hands of successive master calligraphers, such as Ibn al Bawwab (944-1022) and Yaqut al Musta'simi (1214-1296). The script was inherited from pre-Islamic and early Islamic writings and appeared in a more systematized form at the end of the ninth century (Lee 2001). Less monumental than *Kufic*, it was mostly applied to inscriptions, rather than in decoration, and its curves and oblique slants brought a supple and living element to architecture (Papadopoulo 1988).

Islamic calligraphy can be regarded as 'the geometry of line'. The proportion of the letters and the curved strokes are executed according to mathematical calculations. In terms of mystical value, a Sufi belief in awareness of Allah's presence and purpose in His creation is exemplified in iconic form in the art of calligraphy – 'spiritual geometry' (Yeomans 1999: 90). Sufi scholars Ardalan and Bakhtiar (1973) underline the structure of calligraphy because it consists of horizontal and vertical strokes woven into a fabric of richness as powerful with cosmological symbolism. The vertical strokes indicate both an



Figure 2. Kufic and Naskh scripts with local ornaments in Cut Meutia, Jakarta (established 1913 CE). Photo: H.S. Lee-Niinioja.

ontological relationship and a structure for the design. The horizontal ones correspond to the creation, developing the balance and flow of the basic conception. Unity is generated through the harmonious weaving of the two strokes.



Figure 3. Islamic calligraphy combined with Hindu-Buddhist motifs on a Muslim tombstone (fifteenth century CE) in Trowulan, East Java. Photo: H.S. Lee-Niinioja.

Returning to Java, Arabic scripts, particularly *Kufic* and *Ta'liq/Nasta'liq* whose styles were later developed in Iran, were gradually introduced to Javanese mosques (Figure 2). *Kufic* was used in the words of 'Allah' and 'Muhammad' on a gravestone dating to 1082 CE at Leran in Gresik (Baloch 1980; Tjandrasasmita, interview 2004). It was taken from Cambay graves in Gujarat during Islamization in Southeast Asia. Other styles, such as *Naskh*, appeared on stone, glass, wood, and paper in the eighteenth century when Middle East or Mughal architecture was established. Calligraphy was successfully absorbed into local Javanese culture, and decorated mosques and gravestones (Figure 3) as a creative art (Ambary 1998).

Research methods and questions

The study of Islamic art and architecture in Southeast Asia seems to be much marginalized. Bennett (2005) argues that, until the late twentieth century, scholarly discourse on southeastern art generally neglected the significance of Islam's presence in the region. Moreover, among several pieces of research carried out about Indonesia so far, very few have discussed ornamentation in Javanese mosques. No comprehensive and serious study of Javanese mosque ornamentation has taken place in the whole of Java, nor across a given period. This indicates significant gaps in knowledge about the continuity and influence of pre-Islamic ornaments and Islamic ornaments on Javanese mosque ornamentation.

Sedyawati (1990), cited in Marwoto (2003: 4-6), reports: 'In Indonesia, the study of art history is still at an early stage. An effort to make a division in Javanese ancient art was made by Krom (1929 [see: Krom 1919, 1923]). He showed the development from Central Java to East Java. ... Bernet Kempers (1959), in his study about Indonesian ancient art, created a kind of order, beginning with divisions into prehistoric, Hindu and early Islamic eras. Vogler (1949) carried further, examining Hindu-Javanese constructional art through the form of *kala-makara*. He made a distinction...in Central Java, and East Javanese art.'

Regarding Islamic calligraphy in the Javanese mosque, interviews which the author conducted between 2004 and 2006 with Indonesian scholars can shed light on this issue:

- Between the fourteenth and sixteenth centuries, calligraphy was less used in mosques, but was regularly observed on gravestones or in manuscripts in a combination of Javanese and Arabic letters, called 'Jawi'. The blessed Islamic words were read to remember Allah, and inscriptions were perceived as potent as protection. The Koranic words on sculpture and drawings, which depict human beings, animals and florals, suggest the talismanic Sufi metaphysics. Arabesque and geometry were not appreciated, compared to calligraphy, due to their similarity to Hindu-Buddhist scrolls and megalithic geometric patterns (Tjandrasasmita, interview 2006).
- Historically, Islamic art had lost its continuity in certain things. Some cultural centers deviated from the original art forms, due to different interpretations of arts among small kingdoms and diverse tastes of local artists, compared to centralization and professionals in palaces during the Hindu-Buddhist period. The plurality of Islamic Javanese ornaments with this background is key to understanding regionalism in Java (Ambary, interview 2004).
- Islamic ornaments have always existed in Java. Calligraphy was mostly visible; others were shown from time to time, separately or mixed with others (Marwoto, interview 2006).
- Calligraphy was easily adopted here, due to the message of Islam, compared to arabesque and geometry, which likely continued in the mosque (Sedyawati, interview 2006).
- All Islamic ornaments were accepted, but calligraphy was mostly used as a new form of art. Geometry and arabesque became syncretic with local ornaments as a characteristic Javanese motif (Suptra, interview 2006).
- Islamic ornaments continued all the time: a kind of arabesque in the transitory; calligraphy during Dutch colonization; and very popular geometry in the contemporary (Fanani, interview 2006).

In doing research, the sample of people or objectives determines the nature and validity of the findings and theory. In order to assess the use of Islamic calligraphy in Javanese mosques, a purposive sample was taken as the most appropriate method. According to Gardner (1976: 96), a purposive sample is another form of judgment sampling, with the sample comprising 'people or units specially selected for a particular purpose; those selected are supposed to be typical'.

A framework for choosing the samples for this work was drawn up in 2005 with the assistance of the Faculty of Architecture at the University of Tarumanegara in Jakarta, and a CD2000 produced by the Institute of Technology in Bandung for educating architecture students, tourist information, the internet, and literature (Masjid 2000). This gave short accounts of architectural history on 117 famous Javanese mosques. Thirty mosques were chosen from these, ranging in date from the fifteenth century to the present day (fifteen 'transitory', ten from the time of Dutch colonization, and five 'contemporary') (Table 1). Geographically, seventeen of these are from West Java, eight from Central Java, and five East Java, based on Islamization, historical settlements, and different styles of ornament in mosques. The researcher was also aware of several renovations to old mosques, and lack of documents on dates of some buildings and ornaments in the study of Javanese mosque ornamentations, in particular.
No.	Mosque (year established)	Period	Mihrab	Prayer hall	Serambi/ veranda	Outside/ gate/ grave
1	Pajlagrahan, Cirebon WJ (1452)	Т	-	Х	Х	-
2	Agung Demak, Demak CJ (1479)	Т	Х	Х	Х	Х
3	Merah Panjunan, Cirebon WJ (1480)	Т	-	-	Х	-
4	Sunan Giri, Gresik EJ (1485)	Т	-	Х	-	Х
5	Agung Kasepuhan, Cirebon WJ (1498)	Т	Х	Х	-	Х
6	Langgar Kraton Kanoman, Cirebon WJ (1510)	Т	Х	Х	-	-
7	Al Alam Cilincing, Jakarta WJ (c.1520)	Т	Х	Х	-	-
8	Kasunyatan, Banten WJ (1522-1570)	Т	Х	Х	-	Х
9	Sunan Kalijaga, Demak CJ (1533)	Т	-	Х	Х	-
10	Menara Kudus, Kudus CJ (1537)	Т	Х	Х	Х	Х
11	Astana Mantingan, Jepara CJ (1559)	Т	-	-	-	Х
12	Sendang Duwur, Paciran EJ (1561)	Т	-	-	-	Х
13	Al Makmur Jipang, Jepara CJ (1561-1577)	Т	Х	Х	Х	Х
14	Agung Mataram, Yogyakarta CJ (1568-1601)	Т	Х	Х	-	-
15	Kanari, Banten WJ (1596-1651)	Т	-	-	-	Х
16	Jami Kanoman, Cirebon WJ (1679)	D	Х	Х	-	-
17	Hidayatullah, Jakarta WJ (1750)	D	Х	Х	Х	Х
18	Al Anwar Angke, Jakarta WJ (1761)	D	-	Х	-	-
18	Agung Yogya, Yogyakarta CJ (1773)	D	Х	Х	-	-
20	Agung Malang, Malang EJ (1853-1890)	D	-	Х	-	-
21	Al Wustho Mangkunegara, Solo CJ (1878-1918)	D	Х	Х	Х	Х
22	Kampung Nembol, Banten WJ (1880)	D	Х	Х	Х	-
23	Caringin Labuan, Banten WJ (1883-1893)	D	Х	Х	-	-
24	Carita Labuan, Banten WJ (1889-1895)	D	-	Х	Х	Х
25	Raya Cipaganti, Bandung WJ (1933)	D	Х	Х	Х	Х
26	Al Azhar, Jakarta WJ (1952-1958)	С	Х	Х	-	Х
27	Sunda Kelapa, Jakarta WJ (1969-1971)	С	Х	Х	Х	Х
28	Sabilliah Malang, Malang EJ (1974)	С	Х	Х	-	Х
29	Al Ukhuwah Balai Kota, Bandung WJ (1990)	С	Х	Х	-	-
30	Al Akbar Surabaya, Surabaya EJ (2000)	С	Х	Х	-	_
Σ			20	26	12	16

Table 1. Calligraphy appeared at different places in representative Javanese mosques through the three periods

Key: WJ (West Java), CJ (Central Java), EJ (East Java), T (Transitory: fifteenth century-1619), D (Dutch colonization: 1619-1945), C (Contemporary: 1945-present)

Results

The findings reveal that Islamic calligraphy has a favored place in the prayer hall (26), then on the mihrab (20), outside of the mosque building, such as on gates and graves (16), and lastly on the serambi (12). This distribution can be easily explained: (i) Earlier Javanese mihrabs used sacred pre-Islamic motifs as a means of Islamization, and calligraphy was less used (according to the interviews with Indonesian scholars noted above). If it was found, it could have been added later during renovations or other occasions; (ii) Javanese prayer halls have soko guru, minbar, windows, ceilings, etc., where any styles of calligraphy, either symbolic or decorative, can be inserted for the sake of sacredness and 'oneness in Allah'; (iii) Calligraphy often appeared on gates or on tombstones in agricultural Java, but started to disappear toward the contemporary period, due to the demands for space of expanding populations in industrial cities; (iv) A serambi is not sacred itself in a Javanese mosque setting. Instead, it was used for ceremonies such as *wayang* (puppet) plays for teaching Islam at the beginning of Islamization in the fifteenth century (Tjandrasasmita, interview 2005).

Javanese believe that the soul of ancestors as shadows could be invoked by a sacred ritual so that Hindu-Buddhist *Mahabharata* and *Ramayana* stories were accommodated into *wayang*, which Islam adopted. As a result of the flexible stories and foresight of *wali songo* (saints), Islam was concretized to the less modified but still predominant Hindu mythology. *Wayang* became a universal cultural value and ethics (Boediardjo 1978). Moreover, a serambi is a transitional place from profane to sacred space, and because of this, less calligraphy can be visible. However, the findings testify to the importance of Islamic calligraphy in mosque ornamentation, regardless of its appearance across the Islamic period.

Preferred locations of Islamic calligraphy within a mosque building

Hidayatullah (established 1750 CE; Figure 4), located in Jakarta, the capital of Indonesia, displays universalism and locality in design and material in a combination of pre-Islamic, Islamic, Chinese and Batawi (native people from this area) traditions. The Islamic touch appears in the dome, eight-starred geometry, elongated and cursive calligraphy, and arabesque, while its locality is revealed in detail, created by Batawi and Chinese Muslim workers who reside and work near the mosque. The mihrab is full of Islamic ornament. Calligraphy

is executed in a plaster material, and white color is surrounded by a florid arabesque, trying itself to fit within a diamond frame. The spiritual violet color on the mihrab arch emphasizes concentration on prayer. In the prayer hall, holy Koranic inscriptions embellish the upper part of the wooden soko guru. And Hindu-Buddhist scrolls growing from ewers of holy water occupy its lower part, reminiscent of purnaghata (a pot of plenty), which symbolizes the elixir of immortality Buddhism (Tjahjono 1998). in Otherwise, calligraphy appears everywhere in the mosque building. It is no wonder that the mosque's architectural conservation in 1997 led to the Aga Khan Award.



Figure 4. Hidayatullah, Jakarta, West Java (established 1750 CE). Photo: H.S. Lee-Niinioja.

After the Dutch colonization, several Dutch architects built mosques or other buildings across the whole of Indonesia. Al Wustho Mangkunegara (established 1878-1918 CE; Figure 5), located in Solo, is an example. The mosque is a blend of pre-Islamic, Dutch and Islamic styles because the architect was Thomas Karsten from the Netherlands. For example, the use of blinds and glass windows to control light is European; there are Islamic horseshoe arches on the mihrab and gates. The prayer hall has twelve small and long pillars, decorated with calligraphy and geometry. Although a large script of calligraphy on the double gates may highlight the significance of the mosque, the abundance of the green color, which is not always seen to be a symbol of Islam, could represent the love of nature among the population in tropical Java according to a European architect's interpretation. If it does, calligraphy is meant to endow visual pleasure to anyone. These examples imply that the prayer hall is the most favored location for calligraphy in a Javanese mosque building.



Figure 5. Al Wustho Mangkunegara, Solo, Central Java (established 1878-1918 CE). Photo: H.S. Lee-Niinioja.

Dates of Islamic calligraphy, related to mosque building

As one of the earliest mosques in Java, Agung Kasepuhan (established 1498; Figure 6), located in Cirebon as part of the *pasisir* coastline, has syncretic architecture, such as a multi-tiered roof, soko guru, graves, and traditional ornaments, such as triangular tumpal, lotus bud, *kala-makara*, and scroll. Tumpal, a triangular motif, originated from Neolithic and megalithic times, and continued to the Hindu-Buddhist and Islamic periods. No certainty of its origin has been reached. Some suggest it as a human figure, while others consider it to be a stylized bamboo. It has a magic character or represented an idea of fertility (Wagner 1959). The triangular Hindu-Buddist tumpal became a symbol of 'Cosmos Mountain', and the symbolic role of the lotus flower and the *surya* on the mihrab acquired extraordinary significance.

In Hindu mythology, the world was composed of *atman* (the soul) and *maya* (illusion), its creation was symbolized by the growth of lotus. As the primordial lotus grew from the waters of eternity, bringing Brahma (god of creation) and all other creations, it became a dormant motif in representing creation and sanctity (Sedyawati 1990). The identity of the primeval lotus and Dharma (mystical doctrine) is fundamental in Mahayana Buddhism (Bosch 1960). In the context of Islam, the holy lotus could signify 'oneness in Allah', due to its round form, associating with a Muslim's perambulation of the Kaa'ba during the pilgrimage as one circle (Fanani, interview 2006). Moreover, 'Sidra al Muntaha' (surah 53:18) translates as 'lotus tree in the furthest limit'. Metaphorically, the lotus means the highest wisdom that the Prophet has reached by the blessing of Allah. Reaching Allah and achieving his messages are extremely hard (Madjid 2002). In this mosque, incoming new Islamic ornament, such as arabesque and geometry, were seldom seen. Calligraphy, as the only new Islamic ornament, was placed above the ornaments of the lotus flower and the *surya*, to stress the message of Allah. The execution date of the calligraphy is uncertain, but could be 'contemporary', due to its production in embroidery, which is framed by glass.



Figure 6. Agung Kasepuhan, Cirebon, West Java (established 1498 CE). Photo: H.S. Lee-Niinioja.



Figure 8. Al Akbar Surabaya, Surabaya, East Java (established 2000 CE). Photo: H.S. Lee-Niinioja.



Figure 7. Langgar Kraton Kanoman, Cirebon, West Java (established 1510 CE). Photo: H.S. Lee-Niinioja.

Langgar Kraton Kanoman (established 1510 CE; Figure 7), located in Cirebon, inherited the pre-Islamic and Chinese tradition of using ceramics on the wall to expel evil spirits. Compared to the marble mihrab of Agung Kasephuan in the same town, this mosque has gold-gilded and green colors on the arched wooden mihrab. Calligraphy used the same green color as well, the representative color of Islam, expressing the glory of the Kanoman kingdom. In the Koran, five colors (black, white, red, yellow, green) with various meanings are mentioned. The green is the most sacred and prominent, signifying hope, as nature's revival in the spring. Its association with Islam can be attributed to: (i) the color of the Prophet's tribe, the Quraysh, (ii) the Prophet's favorite color, (iii) the Prophet's sayings in the hadith, and (iv) natural environments in the Middle East. The Prophet is said to have always worn a green turban (Abu Bakar, no date). Although this mosque was built in the transitory period, the use of color paints on the mihrab suggests renovation(s), at least during the Dutch colonization era, when color paints were introduced to Java. This fact shows once again the uncertainty of dating Islamic calligraphy.

Located in East Java, Surabaya City was the place where Muslim pilgrims embarked on traveling to Mecca when the Dutch built the road across Java (Tjandrasasmita, interview 2005). As the biggest mosque in Southeast Asia at present, Al Akbar Surabaya (established 2000 CE; Figure 8) has an Islamic dome. It is short of columns. enabling the mihrab to be visible without obstacles. The dominance of calligraphy accompanies arabesque and geometry in a combination of blue and green colors, providing coolness, calmness, and serenity to worshippers. Despite an overall impression of Islamic ornamentation executed in modern technology and materials, details in the mosque building still reveal the local tradition. The examples



Figure 9. Kampung Nembol, Banten, West Java (established 1880 CE). Photo: H.S. Lee-Niinioja.

indicate: (i) less use of Islamic calligraphy in the transitory period, (ii) the importance of syncretic pre-Islamic motifs, (iii) a lack of skills in making Islamic ornament, and (iv) the problems of dating calligraphy in Javanese mosques in general.

Islamic calligraphy at village and urban mosques

Kampung Nembol (established 1880 CE; Figure 9), located in the small village of Kampung Nembol, was said to be built by a Muslim missionary from Palestine, Syekh Soleh Zubaid, during one night, using his supernatural power. Despite its location on an isolated hill at Nembol village, the mosque

is full of pre-Islamic motifs, such as a three-tiered roof, mihrab, soko guru, and Islamic motifs executed by local people through its recent renovation in 1996. Massive and rather clumsy styles of calligraphic inscriptions were seen overall around the mosque. A fusion of pre-Islamic scroll and Islamic arabesque appeared on the mihrab, soko guru, walls and door. Entering the mosque, one feels to be entering the 'vision of Paradise' in a local setting.

The word 'paradise' has a Persian origin and defines 'an orchard of pleasure and fruits', or a 'garden'. It is also used for the heavenly dwelling of the righteous in allusion to the Garden of Eden. For instance, the Barada mosaic panel at the Great Mosque of Damascus in Syria – established 705 CE during the first Islamic Umayyad Caliphate (661-750 CE) – depicts the flowing Barada River, fantastic houses, and opulently foliate trees of variegated greens. In the Koran, the beauties of nature are Allah's sign, upon which Muslims contemplate. A garden is a space of meditation and an earthly reflection of Paradise. It is the perfect state of the world before the fall from grace, which will be restored in the world to come, according to the Abrahamic faiths (Ruggles 2000; Flood 2001).



Figure 10. Agung Yogya, Yogyakarta, Central Java (established 1773 CE). Photo: H.S. Lee-Niinioja.

In contrast, Agung Yogya (established 1773 CE; Figure 10) – the royal mosque of the last Islamic Mataram kingdom in Java – is situated in Yogyakarta city. During the colonial period, the mosque was a refuge shelter against the Dutch. Since its foundation by Sri Sultan Hamengkubuwong I, it has been used as the royal mosque for the Sultan and his successors until now. As the center of the Mataram kingdom, the mosque reveals a pre-Islamic tradition. The mihrab has a main open arch and two closed arches on the wall. They are decorated with floral motifs and Islamic calligraphy in gold. The twenty-four columns in the serambi are carved in a local style, and even their different tones of green were intentionally chosen to suit its function. As the most beautiful ornamentation among Javanese mosques, the juxtaposition of floral and geometric motifs shows its splendor along with the golden calligraphy, particularly when mystic gamelan music (a set of traditional music instruments for *wayang* plays) is performed under the illumination. These examples, chosen from a village and a city, suggest the importance of Islamic calligraphy, regardless of the mosque's setting in Java.

Conclusion

Islamic culture and art have been accommodated in an acculturation process with local traditions from regions with which they came into contact, to fulfil religious and philosophical ideas. This interaction has enriched both the material culture of the Muslim world and of those pre-existing cultures. Java is a case study in continuity and acceptance, creating regionalism in art and architecture. Why is this so?

Six reasons can be proposed: (i) a tolerant attitude between incoming Islam and Javanese people's acceptance of it; (ii) the similarity of Sufism to existing animism and Hindu-Buddhism in terms of mysticism; (iii) the flexibility of the Islamic religion regarding use of local motifs in mosque ornamentation; (iv) the contribution of local ornaments in converting people. At the beginning of Islamization, local traders wanted to have equal rights to liberate themselves from the Hindu caste system. They embraced Islam for social and political reasons, rather than through their religious zeal. Consequently, there was neither capacity nor interest in creating new ornaments. Moreover, Java had plentiful ornaments; (v) a lack of skills of the foreign missionaries in making Islamic ornaments, as Islam was not brought by people who dealt with culture; and above all (vi) a strong conscience of maintaining Javanese tradition amongst the population (Tjandrasasmita 1985).

In an interview with the distinguished Islamic scholar Tjandrasasmita in 2006, he emphasized that Javanese Islam has a few distinct characteristics. Javanese Muslims are concerned with the continuity of their cultural heritage, which was created by 'local genius' in Indonesia across centuries, beyond religions and faiths. Furthermore, they stress the importance of sacred Hindu-Buddhist ornaments, linking them with Islam. Among Islamic ornament, calligraphy has always existed, testifying to its status as the most significant ornament, because it delivers the message of Allah. In syncretic Javanese mosques where mystic Sufism prevailed, it also played a crucial role in enhancing sacredness.

It has been argued that ornament is how aesthetic beauty or symbolic significance is imparted to utility. Symbolic ornaments consist of elements chosen for significance, and aesthetic ones for beauty alone (Heath 1909). In this regard, calligraphy seemed to have an extraordinary position in Javanese mosques, mediating as a vehicle both for Muslims' minds and their eyes. In other words, Javanese Islamic ornament achieved two functions simultaneously, taken from symbolic Hindu-Buddhist and Islamic aesthetic ornament. Whether this is convincing or not, Islamic calligraphy is part of Malay identity. For outsiders, it transcends the value of architecture. The Renaissance theoretician Leon Battista Alberti (1404-1472) said that ornamentation on buildings conveys feelings of majesty, authority and dignity to spectators. By moving their passions through architectural splendor, buildings persuade them to feel the

magnificence of God (Alberti 1999). Even the Victorian thinker Ruskin (1853 (2001): 37) praised Gothic craftsmanship in his theory of ornament (Proposition 4): 'All noble ornamentation is the expression of man's delight in God's work'.

Java is a place of tolerance and flexibility, where a beautiful amalgamation occurred from many sources beyond faiths and religions to pay tribute to Allah. Credit goes to Islamic calligraphy in multicultural Java.

Acknowledgements

Interviewees 2004-2006: Hasan Muarif Ambary (archaeologist), James Bennett (art curator), Achmad Fanani (architect), Hendrajaya Isnaeni (architect), Irmawati Marwoto (archaeologist), Achmad Noe'man (architect), Josef Projotomo (architect), Edi Sedyawati (archaeologist), Wiyoso Yudo Suptra (art historian), Uka Tjandrasasmita (archaeologist).

Understanding the Champa polity from archaeological and epigraphic evidence – a critical stocktaking

Bishnupriya Basak

This paper makes an effort to understand the Champa polity from the second-tenth centuries CE by re-assessing archaeological evidence (beyond temples and citadels) and epigraphic data. One of the chief issues is to assess how far a polity can be reconstructed of 'Early' Champa (second-fourth centuries CE) purely from archaeological remains, and in what ways it may be connected to post-sixth century developments, when stelae inscriptions in Sanskrit began to be issued by rulers. Recent scholarship prefers to see the post-sixth century developments as a history of power struggles between independent and often rival entities, all defined by the generic name 'Champa'. While the core argument here is in agreement with this, the discussion is expanded to defining the nature of polity, raising certain queries regarding legitimation as well as 'Indianization'. Possible analogies from the early medieval state in India are drawn to explain the phenomenon of legitimation. It is admitted that sporadic archaeological work and limitations in-built in Champa epigraphy hinder a better understanding of polity.

Introduction

Champa is considered by scholars working in this area to be a generic name, first occurring in an inscription of one Sambhūvarman (sixth century CE), falling among a set of inscriptions from the Mỹ Son temple complex in Quang Nam province, central Vietnam. The majority of these inscriptions from central and southern Vietnam are stelae inscriptions, placed in temple complexes constructed by the rulers. The archaeological remains above ground, in the form of temple structures, point to three regions connected with the Champa domain in the eighth to ninth centuries CE. These are: (i) Quang Nam, in particular the Thu Bồn Valley; (ii) Nha Trang; and (iii) the region of Phan Rang. The citadel remains at Chan Sa, Cổ Lũy and Thanh Hồ, in different geographical regions, have also been highlighted. In a very enlightening study Vickery (2005) has engaged in a revision of the history of Champa, which, according to him, has remained unrevised since Maspero's publication in 1928. Among many issues, he raises a query regarding the Champa polity—whether there was a 'single unitary state/Kingdom of Champa' or 'a federation of polities dominated by Austronesian-speaking Cham' or 'two or more quite distinct, sometimes competing polities' (*ibid.*: 4). This is the principal object of enquiry in this paper. In pursuing this, I expand my database by incorporating data on material culture beyond temples and citadels, from archaeological excavations of sites like Trà Kiêu in central Vietnam, which do not find a place in Vickery's analysis. I also stretch the chronological framework of my discussion, by focusing on the period 500 BCE-400 CE, that has been defined by many as the formative period of state formation in mainland Southeast Asia (Stark and Sovath 2001; Higham 2002). I will be trying to see how far a 'polity' can be reconstructed singularly from archaeological remains (when epigraphic data is sparse and Chinese textual sources are beset with contradictions), and if any continuity can be seen with postfourth century developments. I will also discuss the possibility of reconstruction from the epigraphic sources, which often become our only source to rely upon in the post-fifth century period, when textual evidence is confusing, and archaeological data are not always forthcoming. I will show how Champa epigraphy has its own in-built limitations for offering any interpretation of politico-administrative status.

I am situating this discussion in the backdrop of theoretical approaches to state formation in Southeast Asia. In recent studies the key word is 'indigenization' or 'localization' of foreign influences, and not 'Indianization'. I propose to show how this has relevance for Champa history.

State formation in Southeast Asia

In Claessen and Skalnik's (1978) definition of early state (as cited in Christie 1995: 237-238) 'a centralized socio-political organization' exists 'for the regulation of social relation' in a stratified society. Relations between the rulers and the ruled are marked by a 'political dominance of the former, and tributary relations of the latter, legitimized by a common ideology...'. In a later study Claessen (1986, cited in Christie 1995: 238) disassociated kingship from the territorial state, which, we shall see below, fits in better with the Champa principalities. Some scholars working in Southeast Asia have also tried to locate a Weberian 'patrimonial bureaucracy', which is often not found in the region (e.g. Reynolds 1995). Such an administrative staff has been considered to have successfully upheld the claim of monopoly of armed force within a given area (see Kulke 1986). Successful conquests of neighboring areas have been viewed as annexations of the ruler, and diffused tributary relations as indices of a hierarchically-structured system of provinces, districts and other divisions. Other ideas that gained currency, particularly among anthropologists, were Wittfogel's (1957) model of Oriental Despotism based upon 'hydraulic societies', and Marxian theories of the 'Asiatic Mode of Production' (cf. *ibid.*; Zingarelli 2016); Heine-Geldern's (1951) thesis of the religious basis of early state and kingship proved to be influential. All of these have been heavily critiqued (Christie 1995). Yet the term state continues to persist in the vocabulary of scholarly writing on ancient Southeast Asian politico-administrative systems. Scholars have tried hard to define the moment of transition from 'chiefdom' to 'state' in early Southeast Asia. Trade is often seen as a trigger in this transition (Hall 1985; Glover 1996). The value of exchange networks both for accumulation of wealth and for spread of knowledge and ideas has been long emphasized in 'Indianization' studies (Bellina and Glover 2004). In still other works, wet-rice cultivation has been viewed as the chief catalyst that led to momentous changes (Mabbett 1977).

While all these ideas have been hotly debated, the one that has had the most profound impact on studies of state formation is that of 'Indianization.' Two questions that Mabbett (1977: 143) cogently argues dominated scholarship for a long time were: 'How did Indian influence spread through Southeast Asia?' and 'How far did Indian influence dominate Southeast Asia?' Majumdar (1985 (1927)), one of the principal architects of the Indianization theory, emphatically spoke about 'colonization' of early Southeast Asia by Indian immigrant conquerors and settlers (the Ksatriya or the warrior theory). Cœdès (1968b), another proponent, gave prominence to commercial motives. Although he gave due weight to indigenous initiative, he viewed Indianization more as a transplant than a mere graft. The most radical reaction to this came from van Leur (1955), who insisted that Indian influence was nothing more than 'a thin flaking glaze; underneath it the whole of the indigenous forms has continued to exist' (cited in Mabbett 1977: 144). Since then, diverse interpretations have been offered (see Christie 1995), the only thread of unanimity being the recognition of the presence of Indian inputs. Kulke (1990) countered these views by propounding the 'convergence' thesis, in which he highlighted the relatively late period of state formation in eastern and southern parts of the Indian sub-continent, which formed the main corridors of linkages with Southeast Asia. He upheld the major issues of current scholarship (Kulke 1986): first, that there was 'indigenization' or 'localization' of foreign influences and not 'Indianization'; and second, an emphasis on the persistence of indigenous, prehistoric 'pre-state' structures throughout Southeast Asian history.

Interest in indigenous cultural traditions like those of Bali and Java led to the growth of the *Negara* and *Maṇḍala* models of state formation as alternatives to Eurocentrism (Christie 1995: 240). Although Christie (*ibid.*) has expressed skepticism for these models, which according to her are essentializing 'eastern' mentalities, I cannot help agreeing more with Reynolds (1995) that these are important avenues for establishing the distinctiveness of a different social formation.

There is yet to be a consensus on what is perceived as an early state in Southeast Asia, or when it first emerged. This is because Southeast Asian political systems, although bound by certain unitary features, nevertheless throw up diverse pictures in terms of evidence. There is no unanimous opinion on the agencies of the spread of 'Indian' influence. What perhaps is almost unanimously agreed upon is an existing substratum of 'domesticated' local features traced through folklore and linguistics in recent studies (Vickery 2005) that created a space for interaction with external agencies, Chinese or Indic. Considering the difficulties of the situation, I prefer to use the term 'polity', define it, and assess its complexity *viz a viz* Champa.

500 BCE-400 CE - genesis of 'state formation'?

Archaeological studies have often linked urban genesis with state formation, and changes in settlement patterns have been seen as the key to transition to complex polities (e.g. Stark and Sovath 2001; Stark 2006). The Iron Age Sa Huỳnh culture (500 BCE-100-200 CE) is distributed all along the coast in central Vietnam as well as in the upland region along the rivers (Lam Thi My Dzung and Nguyen Duc Minh 1997; Lam Thi My Dzung 1998, 2011; Yamagata 2006). Archaeological investigations, including excavations at some major sites with burials, have been used to argue, particularly with respect to the concentration of Sa Huỳnh sites in the Thu Bồn Valley, that the later or advanced stages represented a chiefdom society. With not much data forthcoming from habitation sites of this period, this notion is principally based on differentiation in burial modes, and the inequality seen in grave offerings like ceramics, iron knives, bronze artifacts and, most importantly, beads of glass and agate. Junker (2004), although discussing the emergence of political structures of later periods of Southeast Asian history, has argued that archaeological evidence of 'pre-state complex' 'Metal Age' societies is meagre, and that therefore relatively less is known about them. While I am not in a position to comment on the rest of Southeast Asia, I have argued elsewhere (Basak 2009) that the limited nature of evidence in central Vietnam, stemming from certain biases in archaeological investigations which have focused less on habitation sites, inhibits us in making any conclusive remarks on the political or social formation of this period. A chiefdom or ranked society is usually manifested in 'elite' architectural constructions, often having ritualistic significance (Stanish 2004). In Sa Huỳnh culture no such data are forthcoming from the archaeological record. No evidence persists either of ritual feasting, which may be evident from faunal remains or any redistributive mechanism seen in storage facilities, like a central granary.

The Sa Huỳnh culture declined in the second half of the first century CE (in some cases continuing until the second century CE), to be followed by a phase that Lam Thi My Dzung (1998) defined as Early Champa. In a more recent paper (Lam Thi My Dzung 2011), she prefers to use the term Early Cham for the period 100-500 CE, by which is meant Cham culture and not merely the Champa kingdom or Cham ethnic groups. If we go by this classification, the Early Cham cultural assemblage is characterized by ceramics and sometimes by architectural remnants of towers found at sites which often show remains of Sa Huỳnh burial underlying. She (*ibid.*) argues for the presence of Early Cham habitation deposits in the Hội An region, e.g. at the sites of Hau Xa I, Dong Na, and Bau da. Although the transition from Sa Huỳnh to Early Champa is not very well understood, scholars agree that a change can be perceived in the archaeological record of these sites around the first century CE (Glover *et al.* 1996). The lowest layer at Trà Kiệu signals a rapid transformation, happening within a very short span of a few hundred years' time.

It is precisely to understand the emergence of the Champa culture that a team of Vietnamese, Japanese and British archaeologists conducted a series of small excavations between 1990 and 2000 at Trà Kiệu, considered to be the ancient capital, and at Go Cam, 3.5 kilometers away from the former. Two sets of dates are available for the site: around the seventh-eighth centuries CE (Nguyen Kim Dung *et al.* 2003),

or around the third century CE (Yamagata 2007). The artifacts include mostly Han-style pottery, roof tiles, eaves tiles with human face decorations, and other artefacts with Han-affiliation. At both sites the excavators have seen the 'influence' of Han China in the formative stages of Champa. The material evidence of supposed Indian influence lies in the few sherds of rouletted ware, in a jar with stamped designs, in potsherds with floral motifs, and, of course, the *kendis*, of which only the spouts were discovered at Go Cam. The architectural foundations of a pillared hall with incomplete brick floors, substantially disturbed by robbing activities, were found, and a stone and brick rubble column base (Nguyen Kim Dung *et al.* 2003; Yamagata 2007).

Trà Kiệu is considered to be the capital of Linyi (e.g. Yamagata 2007), mentioned in Chinese annals as an independent entity of power that rebelled against the later Han and established itself in parts of central Vietnam in the Thu Bồn River valley. Yamagata (*ibid.*) equates Lin-i with early Champa and believes Trà Kiệu and Go Cam symbolize the emergence of a unified polity in the valley in the second to third centuries CE. Similar polities were developing, according to her, in the third to fourth century CE in regions south of this (e.g. centers at Cổ Lũy in Quảng Ngãi, and at Thanh Hồ in Phú Yên). These three foci of power had interactions with each other, as seen from the stylistic similarities of eaves tiles with human face decorations found at all three centers, and were taken to show the germs of state formation under Indian influence (*ibid.*).

Certain problems are evident in this argument. First, the identification of Linyi with Early Champa is controversial. Vickery (2005) firmly asserts that the history of both need to be seen separately. Second, and more important, the reconstruction of a polity, be it kingdom or any other, is fraught with problems pertaining to evidence. No epigraphic data is forthcoming for this period; the archaeological evidence is too fragmentary to offer any scope for interpretation. The changes noted in the Early Cham cultural assemblages (mostly restricted to ceramics) by scholars like Lam Thi My Dzung (2011) are not doubted at all, but these cannot be taken as markers for a distinctive change in settlement patterns. The presence of vestiges of old citadels along with the 'changes' in material culture are perhaps insufficient to talk of 'state formation' in central Vietnam during 100-400 CE.

A comparison may be made with research in Angkor Borei, considered to have been the main center of the Funan polity during 400 BCE-500 CE. An extensive moated settlement with reservoirs and elaborate irrigation network, where brick remains have been uncovered in an intensive multi-disciplinary excavation project (Stark and Sovath 2001), suggest the functioning of a complex polity. The absence of any comparable data from Trà Kiệu or Go Cam in the second or third century CE is noteworthy.

If we look into studies of state formation in early historical or early medieval phases in the Indian subcontinent (e.g. Sahu 2012), the model of an early state with strong Indian influence at these sites does not hold well. State formation was never a homogenizing process during any of these periods. The uneven nature of this process in north India in the age of Buddha has been stressed by Thapar (1978, 1984, 1987). In the middle Ganga plains, the convergence of several favorable conditions facilitated the emergence of effective political systems like Kosala and Magadha. This region was a natural habitat zone for paddy cultivation and its subsequent developments. The situation was different in the upper Ganga Valley under a prestation economy, from that in the *gana samgha* formations in the terai or Gorakhpur-northern Bihar region under community ownership of land. Subsequently, the Mauryan Empire is best-conceived in terms of different social formations. The presence of state and the extent of its administrative control was not the same everywhere (Thapar 1987). Uneven developments are also seen in the secondary states in post-Mauryan Deccan and the east coast of India (Seneviratne 1981; Chattopadhyaya 1987). In early Tamilakam in southern India the situation was not very different (Gurukkal 1993). Given such complexities in the emergence of 'state' in early India, drawing analogies with central Vietnam is logically impossible. Having said that, I am not underestimating the importance of archaeological research undertaken so far. The findings are important for indicating a political sub-stratum, however diffused (for want of evidence), in central Vietnam that provided a framework for later developments.

The emergence of Champa: early inscriptions from Mỹ Sơn and other parts of central Vietnam: fifth to eighth centuries CE

A regular series of inscriptions dated from the fifth century CE onwards come from central Vietnam (after Majumdar 1985 (1927); Schweyer 1999; Golzio 2004), mainly Mỹ Sơn in Quảng Nam province, where a religious complex was built by a succession of royalty until the end of the thirteenth century CE. From the fifth to late eighth centuries, nineteen inscriptions exist in Quảng Nam province, with twelve in Mỹ Sơn, and three elsewhere (Southworth 2004).

The earliest belongs to one maharaja Bhadravarman, who makes a perpetual endowment (*akṣayanīvī*) of land to god Bhadreśvara, along with its inhabitants (*sa-kuṭumbijana*), the tax being reduced from one-sixth to one-tenth of the produce that was to be given to the god. The violators of this royal order were cursed through quotation of imprecatory verse from the *Dharmaśāstras*. This practice of naming the god after the ruler came to be prevalent in India in the early medieval period (Chattopadhyaya 1997: 199), a point I will return to below. The boundary delineation shows that it was practically a valley with mountains on three sides and a river on the fourth. Local names were apparently Sanskritized, perhaps to give the land a sacred character, further emphasized by the terms Mahāparvvata and Mahānadī. The inscription is Puranic in inspiration, based on reference to Śiva, Viṣṇu, Brahmā and Umā (Southworth 2004: 221).

The Chiem-son rock inscription (presently under water) of Bhadravarman, a little to the east of Mỹ Sơn and near the Thu Bồn River repeats the boundary of the granted land given in the Mỹ Sơn inscription. The place might have been a corner of this land, as would appear from the location of the inscription. Another short inscription from the same village of Chiem son (the Hon Cuc inscription) belongs to the time of Bhadravarman (Southworth 2004).

An inscription from Cho-dinh, which is far to the south of Mỹ Sơn, in Phu-yen province, north of Cape Varella, records a human sacrifice offered to Śiva, called Bhadreśvarasvāmin, by Mahārāja Bhadravarman or one of his descendants. This shows that Bhadravarman's authority extended far to the south of Mỹ Sơn and, concomitantly, god Bhadreśvara's popularity. Human sacrifice, however, is not associated with the rituals of Brahmanical worship in this period; in all probability it was a local practice. The Huế stela inscription of the early to mid-sixth century refers to god Kandarpa-Pureśvara installed by one Campeśvara whose name is broken (Pal 2012).

The subsequent series of inscriptions from Mỹ Sơn begins with the stelae of Śambhuvarman, assigned to the sixth century. Śambhūvarman represented a family of later rulers, different from that of Bhadravarman, and known as the Fourth Dynasty, believed to have been preceded by three dynasties mentioned in Chinese and Vietnamese chronicles (Golzio 2004: IX). This family had its capital at Simhapura, which has been identified with the ruins of Trà Kiệu. In terms of composition, these inscriptions bear similarities with those of Bhadravarman. The stelae inscription of Śambhūvarman is engraved on a pillar close to that of Bhadravarman and is practically a continuation of the latter (*ibid*.: 7). Thus, it seems these new rulers claimed some sort of a historical continuity with the earlier ruler of the land. A parallel attempt may be found in the famous Allahabad *praśasti* of Samudragupta engraved on an Aśokan pillar (Sayantani Pal, personal communication, September 2012). Śambhūvarman was preceded by his ancestor Rudravarman, the first of this new family, who was considered the 'ornament'

of a *Brahma-Kṣatriya* family. It has been argued that in early medieval India the *Brahma-Kṣatriya* status was a transitional one for emerging royal families who were intent on acquiring a sovereign status in the region (Chattopadhyaya 1997). Śambhūvarman re-installed the god installed by Bhadravarman I and renamed it Śambhū-Bhadreśvara, thus associating himself with the god as well as the ancient ruler of the kingdom. It confirms the grant of the valley earlier made by Bhadravarman I. Incidentally this is the first inscription in which the generic name Campā is mentioned.

The next set of inscriptions belongs to Prakāśadharma, a ruler of the seventh century CE, belonging to the same family. His coronation name is Vikrāntavarman I. These were inscribed in varied places – a pedestal, stelae and rock at Mỹ Sơn, Trà Kiệu, Thạch Bích and Duo'ng-Mong, all in Quảng Nam province. The inscriptions inform us of the erection of a temple (*pujāsthāna*) of Kuvera at Mỹ Sơn, the installation of Amareśa (Śiva), the establishment of a temple of Viṣṇu-Puruṣottama, the establishment of two *haṭakas* in honor of Kandarpadharma (the father of his grandfather's mother), and the re-establishment of a temple (*pujāsthāna*) in honor of Vālmikī. The Lai-cam Rock inscription from Khánh Hòa province records his gift of victory to Śiva, which he appears to have achieved in that place. Two stelae inscriptions of the same Prakasadharma from Mỹ Sơn, dated 658 and 687 CE, record his donation of *Koṣṭhāgāras* to Īśāneśvara, Śambhū-Bhadreśvara and Prabhāseśvara (all named after his predecessors). It is mentioned that the god Prabhāseśvara was installed for the welfare of Champapura. Further donations of a *Koṣa* to Īśāneśvara, i.e. a Śivalinga (Golzio 2004: 24), and a mukuța to Bhadreśvara are mentioned. The Cham place names in which they were located have been Sanskritized.

The next set of six inscriptions is attributed to Vikrantavarman II, all from Mỹ Sơn, dated between 709-732 CE. Prakāśadharma is praised here as *Champāpura-parameśvara*, etc. The information pertains to embellishments of religious structures. Incidentally, four Cham inscriptions from the adjoining region of Trà Kiệu also record similar information of installation of images and grants of Koşa.

What strongly emerges from this discussion is the functioning of a monarchical polity centered in the Thu Bồn valley between the fifth and eighth centuries CE. The territorial limits of this polity may be reconstructed from the locations of the inscriptions. Although the majority were from Mỹ Sơn, a few were issued from beyond, suggesting the extension of the royal authority to Huế, Khánh Hòa, Cho Dinh, etc. Trà Kiệu, identified with Simhapura, may have been the capital, although archaeological evidence is far from satisfactory to corroborate this. A dynastic rule is postulated, although no apparent connection can be seen between Bhadravarman, the first ruler, and the successive list of kings of the Fourth Dynasty. A line of matrilineal succession is hinted by Majumdar's (1985 (1927): 43) reconstruction of genealogy of this dynasty. The lineage of Bhadravarman remains shrouded in mystery, but he remains the unmistaken founder of the royal line to whom all later rulers bowed down in respect. Titles like *Champāpuraparameśvara* and Champāvanībhūja may be seen as exalted claims of the rulers to establish their suzerainty over a subject population. However, no information is forthcoming on the paraphernalia of court, nor is there any mention of bureaucratic machinery.

Given the nature of the evidence, I would like to argue that the religious complex of Mỹ Sơn assumed an overarching role in the functioning of the monarchical rule, as seen from the overwhelming donations made to the sanctuary and installation of different Puranic deities over a long time span. Majumdar (1985 (1927)) argued that Mỹ Sơn was the stronghold of this kingdom, but data supporting this are not forthcoming from epigraphy or archaeology. The Sanskritization of local names was deliberate, to emphasize the sanctity of the land, perhaps to a population alien to Brahmanical influence. If *Koṣṭhāgāras* were granted to the sanctuary, can it be seen as a repository of wealth of the kingdom? Two *haṭakas* or marketplaces were also granted, whereby it may be assumed that the income generated from the latter went entirely to the sanctuary. No network of tax collection is hinted at, but would the mention of *haṭakas* imply the existence of such machinery?

What remains enigmatic is the precise role of Mỹ Sơn and the relationship between the sacred and the regal (discussed below). Prevalence of local practices may be reconstructed from a Cham inscription that mentions a *nāgarāja* as a protective deity of a nearby spring. Some of the important works of architecture and sculpture belong to this period, and Trà Kiệu is an important site in this regard. However, no details can be reconstructed of the settlement pattern or of urban centers, if any existed.

Kauthāra and Pāṇḍuraṅga – eighth to ninth century CE, formation of a second kingdom

The historical scenario shifts to Phan Rang and Nha Trang (Pāṇḍuraṅga) in south Vietnam, from where a subsequent series of inscriptions were issued by the so-called Fifth Dynasty (758-875 CE), which had its capital at Virapura, later Kauthara.

Like Mỹ Sơn, Po Nagar in the south was a religious center with six sanctuaries, and of a similar magnitude as Mỹ Sơn, covering a lengthy time span from the seventh century CE, to the thirteenth century, based on architectural additions. All inscriptions (774-854 CE) are found either in the region of Phan Rang or at Po Nagar in Nha Trang, issued by a completely different family of rulers. Although three of the rulers asserted that they ruled over the whole of Campā (Prathivindravarman and Indravarman in Phan Rang) or over Campā-pura (Harivarman in Nha Trang), Vickery (2005: 29) rightly argues that these rulers had no effective control over territory beyond Nha Trang. The Po Nagar temple inscription of Harivarman (817 CE) even refers to his son Vikrāntavarman as *kṣatrottama* who was made Pandurangadhipati.

Six inscriptions are engraved on a pillar at Po Nagar (Nha Trang) Temple. An inscription of Satyavarman of this family (dated 784 CE) refers to the mukhalinga of Sambhu established by Vicitrasāgara, the ancestor of a new mythical lineage. Reference is found in one of the inscriptions of the theft of this image by ferocious, dark-colored (preta, atikrsna, ruksa) people of other cities (anyapuraja) who came in ships (*pota*). It was eventually recovered and re-installed by Satyavarman, possibly with the images of Durgā and Ganeśa (Golzio 2004: 37). As seen in the earlier set of inscriptions from central Vietnam, deities of Mahādeva (Śiva) were installed with riches and embellishments at Po Nagar, Phanrang and Nha Trang. Incidents of burning of Bhadrādhipatiśvara (Śiva) by an army of Java – not to be confused with Yavadvipa, one or more islands of the Indonesian archipelago (*ibid*: 38) – is referred to in the second part of the Yang Tikuh (Phanrang) stelae inscription, dated 799 CE. The first part is a eulogy of Indravarman I, the third ruler of this family who is described as Bhagavān (and compared with Mahendra, Indra, Dhanañjaya), Yajñaratnapramukhya (who regards sacrifice as their principal treasure), one who maintains varnas and āśramas, one who is brahmaksatrapradhāna, or the chief of the brahma-Kshatriyas, and is the lord of Campā (sakala-Campādhirāja). Indravarman reinstated the deity, granted it many objects including cattle and land (kstera). He also installed an earthen linga of Indrabhadreśvara and granted him a pradeśa, comprising two fields of Śivaksettra and Yajñaksettra. Donation of kosa, kosthāgāra, three granaries with females and *devadās*īs to the deity is emphasized.

The establishment of Indrabhogeśvara, Indrabhadreśvara and Indraparameśvara at Vīrapura by Indravarman is mentioned in the Glai Lamov (Phan rang) stone inscription of Indravarman (801 CE). Interestingly, in the same inscription Maheśvara and Nārāyaṇa are mentioned separately. They are said to have united in one image called Śaṅkaranārāyaṇa, to whom many treasures were given, including koṣṭhāgāras and a village near the mountain Chamlaip. These koṣṭhāgāras are associated with places bearing Cham names. Some more donations are mentioned in the Panduranga mandala. A goddess of Kauthāra is also mentioned in one of the inscriptions. The Po Nagar stelae inscription of Vikrāntavarman III (dated 854/855 CE) records the grant of vast fields (*viśālakṣettra*) to two temples of Śiva (fields were named after the god), worshipped under the names of Vikrāntarudreśvara and Vikrānadevādhibhaveśvara, for the sake of performance of sacrifices (Pal 2012).

A Cham inscription of the beginning of the ninth century on the stelae of Glai Klong Anoh, a small thicket in the fields of Phan Rang, as well as one from Po Nagar dated 813/814 CE are particularly important as they refer to King Śrī Harivarman and his Senāpati Panroe (a local person). The Po Nagar inscription relates the exploits of the Senapati Pamr, who claimed victories over Kambujapuras and constructed a new image of Bhagavatī, a new temple of Śiva, Vināyaka and one of Śrī Maladakuthāra. Objects and fields given as donation are mentioned, but it is not clear whether Pāmr was the donor. Donation was also made to Visnu. Vickery (2005) believes that although it discusses the exploits of a Senāpati in form this was a royal inscription. Another interesting inscription referring to an individual outside the royal family (written both in Cham and Sanskrit) is the Bakul (Ninh Thuan province) stela inscription. Finot (cited in Pal 2012) believed that the unpolished pillar bearing the inscription was found near the village of Chung my, south of Phanrang. It ascribes the meritorious act to a nāyaka named Sāmanta who was under the protection of Vikrānta and Īśvaraloka (Śiva). For his kinsmen (svajana) he built two temples (devakula) and two viharas for Jina. Two pieces of land were also donated. His son Sthavira Buddhanirvāna composed it after his death. The Cham text is dated 829/830 CE and records donations to the god Pranaveśvara. It refers to two fields and two monasteries, one of the latter named Devaraksa (Pal 2012). The prevalence of local cult practices is seen in the mention of Vanāntareśvara, to whom a king of Campāpura dedicated an inscription seen on a jug. This may be seen as a kind of appeasement of a local deity worshipped by forest dwellers (ibid.).

Thus, we are again confronted with a situation in the south, which in many cases may be seen as a continuation of certain earlier practices in the Thu Bồn valley, although under a completely different royal lineage. Rulers were making exalted claims of their suzerainty, which actually had a restricted geographical limit. Sacred space was much revered and protected with elaborate donations made for its upkeep. Religious sanctuaries emerged as landed magnates, often acting as storehouses of wealth. In the southern set of inscriptions granaries were granted, along with *devadāsī*s, a practice seen in early medieval south India.

Certain terms used in the inscriptions to describe the royalty are significant. The upholding of *varṇas* and *āśramas* is considered to be one of the most important virtues of rulers, as prescribed by the Dharmasastras in early India. It is interesting that Indravarman is eulogized as *Brahmakṣatrapapradhāna*. The transitional status in political ascendency is stressed again, and possibly the ruler's importance is emphasized by affixing 'pradhāna' to the status. For the first time, we get some inkling of a bureaucracy. Is the feudatory status of one official mentioned in the epigraph indicative of a practice of granting land in return for services? The name of the official is given as 'sāmanta', which usually refers to the official status of a feudatory. This is an uncommon instance.

According to Southworth (2004; cited in Vickery 2005: 33) the collapse of early Tang trade destroyed the commercial dominance of the Thu Bồn valley, to be replaced by an entirely new system of trade operating in the Red River delta in the eighth century CE. During this time, the ports of Nha trang and Phan rang on the sea route from Java to northern Vietnam became important; this may explain the flourishing of these regions during this period.

Rise of Indrapura: a new political-economic ascendency in the north (ninth-tenth century CE)

A new political-economic ascendency was again seen in the north, with a rise of the so-called Sixth Dynasty. Vickery (2005: 34) links this to another change in international trade routes from China to Indonesia and India. They had their capital at Indrapura, identified with Đường Lâm, the territorial limit perhaps extending to Quảng Bình, as seen in the presence of nearly half of their inscriptions north of Huế.

The Dong Duong stela inscription of Indravarman II is dated to 875 CE. The ruins of Dong Duong have been identified with ancient Indrapura (Southworth 2004). The inscription begins with the praise of Lokeśvara who (in part B) is said to have been born from a succession of the Buddhas. It also refers to installation of the linga of Bhadreśvara at Campā. Respect is paid to Śambhū Bhadreśvara who protects Champapuri where all religions were prevalent. This outlines the religious affiliations of the royalty, both Buddhist and Saivite. Indra and Brahmā are also invoked. The establishment of a monastery is mentioned, built not for revenue but for the sake of Dharma, to be enjoyed by the monks, not by the king. Fields, gold, silver, kāmsā are donated, along with corns (sa-dhānya), and male and female slaves. Details of the fields (indigenous names) are given which were granted to Lokeśa. Ksatriya, brāhmana and vanijas were asked to protect it; for the first time vanijas or merchants are mentioned. A detailed genealogy is given in the inscription. Interestingly, Part B of the inscription mentions that this 'beautiful land' had rich men but no king. Indravarman was made king by some persons in the locality. Is this reflective of the actual circumstances of ascendency? We have no supportive evidence to fall back on. It is said that Indravarman derived his sovereignty from Bhadreśvara, not from his father. He was originally called Laksmindra Grāmasvāmi and Jayaindravarman. The tradition of deriving sovereignty from the deity continued.

The Bo Mung (south of Da Nang) stela inscription of this king, dated 889 CE, is engraved on a pillar together with that of Jaya Simhavarman, who followed Indravarman II. Among 42 lines, 14 are in Sanskrit, the rest in Cham. The Sanskrit portion begins with an invocation to Siva and Bhadresvara. This inscription is important for mentioning ministers, mantri Ajñā Manicaitya and his younger brother Iśvaradeva; rarely do we find any reference to bureaucracy in Champa inscriptions. Both are installing images of Bhagavatī, Mahālingeśvara and Īśvaradevādideva. The Hoa Que stela of a later ruler, Bhadravarman III, dated 909/910 CE, records the various pious foundations made by three brothers, councillors of Bhadravarman and sons of Sārthavāha, who was the brother of the first queen of Indravarman II. The foundations were made in 820, 830 and 831 CE respectively. The inscription refers to Ājñā-mahāsāmanta, who was the *amātya* of Campādhirāja Bhadravarman. His brother Ājñā narendra Nrpavitra was well versed in the Śaiva religion. His younger brother Ājñā Jayendrapati was 'a minister of good soul' (Golzio 2004: 105). The practice of issuing inscriptions in both Sanskrit and Cham was gaining acceptance. In the Sanskrit portion the donation of the king is mentioned; the noble kings of Campā (Campeśvara-vara-nrpa) are asked to listen to his words. The Cham portion informs the people about the religious endowment of the ruler and requests them not to destroy it. Thus, it is clear that although court documents were written in Sanskrit, the local language was used to communicate with people. The inscription of Jaya Simhavarman I, on the same stela, records his donation of bhukti and a white banner (ibid.: 77).

The Phu Thuan (west of Mỹ Sơn) stela inscription of Indravarman is in Cham and has been placed in the ninth/tenth century on paleographic grounds (Pal 2012). It records the donation of Indravarman (I or II) to god Bhāgyakānteśvara. The king informs the residents of the Champanagara that he exempts the temple from all taxes and employs four priests to serve him. The taxes are to be given to them for their expenses as well those of worship of the god. The following set of inscriptions from Ban Lanh (north of Dong Duong, dated 898 CE), Dong Duong, Dai Huu (Quảng Bình province) are bilingual, indicating that this was becoming standard. These are full of details of religious endowments, often directing certain persons to protect the establishment. The enumeration of fields granted with measurements is in Cham, possibly to emphasize the importance of these grants to the local population. The rulers are seen claiming high ancestry by associating themselves with mythical ancestors like Bhrgu.

The earliest Buddhist inscription of Champa (Majumdar 1985 (1927)) is engraved on a stela at An-Thai, Quảng Nam province, dated 902 BCE. Respect is paid to Lokeśvara/Lokanātha for whom king (*nṛpa*) Bhadravarman (II) built a monastery. Both he and Campādhipati Indravarman II were in charge of the

'possessions' of the monastery. The inscription records the erection of a statue of Lokanātha by the Sthavira Nāgapuśpa, the abbot of the monastery of Pramudita-Lokeśvara (Golzio 2004: 89). In the Cham portion, the king Indravarman confirms the grants of all ksetras made to the *vihāra* by Bhadravarman, and the enumeration of the fields is given.

Certain points emerge from this brief review. While the same trend continues of making endowments to religious establishments, the royal family of Indrapura/Amarāvatī donated simultaneously to Buddhist and Brahmanical sects. The practice of claiming high ancestry persisted. Inscriptions began to be made in both Sanskrit and Cham, and details of enumeration of fields and measurements were given in Cham. For example, the Nhan Bieu (Quang Tri Province) stelae of Indravarman II, dated 911/912 CE, mentions the name, amount of land in local units (*galauk*) and the measure of rice yield of each plot. Some of the landmarks mentioned are 'house of men of the enclosure of the areca palms', Great Ocean, border stone of temple. The details of dry lands are also mentioned, the house of the chief florist, forest of the 'house of God' and other forests, the sea and the fortress of the lord of Trivikramapura served as landmarks (Golzio 2004: 114). These data give some idea regarding the land granted to the temple. Land under regular cultivation was given, measured in terms of its produce. The temple was situated in an area bordering the ocean and forest. The names of fields and forests are indigenous, but names of gods were in Sanskrit. Whether they were local deities whose names were Sanskritized, or they were newly established by rulers in order to bring the area under control is not certain.

We find further details of the bureaucratic machinery in a few select inscriptions issued from this region. The terms 'mahāsāmanta' and 'amātya' refer to the feudatory status of this particular person, as well as his ministerial position. 'Sarthavaha' refers to the existence of a merchant who it appears was related to the royal family. In the absence of any other data on the royal court and its functionaries we have to use epigraphy for such reconstructions.

In the 980s the first war with Vietnam broke out, ending with a Champa defeat and a change of dynasty. Three inscriptions of the dynasty were issued from the south, in Po Nagar: Indravarman II's inscription (dated 918 CE), Jaya Indravarman's inscription (dated 965/966 CE), and one almost illegible in which only the name of the latter can be read. It cannot be said with any certainty why a power with its base in the north issued inscriptions from the southern region; for a brief period did this dynasty hold sway over this area? A further dynasty (the 'Seventh') which mentions Indrapura as their capital began with Harivarman II, referred to in an inscription from Mỹ Sơn, dated 995 CE. While the practice of religious endowments continued, henceforth we are informed of rising instability in the political sphere owing to wars with Kamboja, aggression from the Vietnamese in the far north, and internecine conflicts between the Campā principalities. Inscriptions of kings of the 'Seventh' dynasty are often found in Mỹ Son in the eleventh century, with details of endowments; this was far from their seat of power. Could this be because Mỹ Sơn symbolized *the* sacred space to a royalty that had grown insecure in a situation of internecine war and conflicts? A series of inscriptions followed from Mỹ Sơn, Po Nagar, and Phan Rang by succeeding rulers. The narrative becomes a little incoherent, and the status of their kingdoms is not known; e.g. the status of Vijaya is shrouded in mystery. We do not know, following Vickery (2005), if this was a separate kingdom. A Cham inscription dated 1401/1402 CE, engraved on the plinth of the gate of the royal citadel of Bình Đinh, refers to the last kings of Campā.

A process of legitimation?

Can the bestowing of endowments and riches to religious establishments be interpreted as means to legitimize the rule of royalty unsure of its acceptance to a subject population? Can the temples be seen as sacral seats of power? For comparison we can turn to the early medieval (seventh-thirteenth century CE) context in India, which presents a scenario of a shift in the seat of state formation following

the fragmentation of a centralized structure, from the mid-Ganga Valley to marginalized regions, witnessing the rise of sub-regions and localities. The Brahmanical social formation and political order spread to these areas following land grants issued in the form of chiefly copper plate inscriptions. A continuous interaction between the Brahmanical order and the autochthonous forces in these marginalized lands followed, which showed diverse manifestations. This has been much worked upon in recent historiography (Sahu 2013).

Legitimation of temporal power was a necessity for ruling elites in these marginalized regions, experiencing local state formation. Having said this, one should not overlook that the need for legitimation or a 'constant validation of power' (Chattopadhyaya 1997: 196) was very much present in established state societies as well. Legitimacy, according to Sahu (2013: 181) implies conforming to established rules and the consent of the subjects to the given power relations. Ruling elites sought legitimation of their rule by engaging in various strategies that went beyond the purview of the political control they exercised. These included the construction of elaborate genealogies that claimed high ancestry for their lineages, appropriation of the *itihasa purana* tradition, patronage of art and literature, and lavish endowments to religious establishments like temples, monasteries and to the Brahmanas, the priestly class. The textual references in literature and the visual imagery present in coin motifs and art aimed to create an idealized image of the ruler, who was seen almost at par with the divine power. Epic-puranic ideas were constantly drawn upon. Lineages of humble origin like the Sarabhapuriyas and the *Panduvamsis* of south Kosala (in modern Orissa) engaged in strategies of donations to Brahmanas, Buddhist viharas, and temples to win a sanction of acceptance from the local society and outside (Sahu 2013). This process of Sanskritization adopted by the ruling elite to transform themselves as well as the subject population was, however, only partially based on epic-puranic tradition. It also incorporated local indigenous tradition, of which examples are numerous. A fine example is the cult of Jagannatha that evolved in early medieval/medieval Orissa that has been extensively worked upon (Kulke 1977).

The elements discussed above made up a 'trans-political ideology' according to Chattopadhyaya (1997). He dwells extensively on the relationship between the temporal power and the spiritual authority. One of the means by which the king sought to approximate the sacral power was through identification with the divinity enshrined in the idol within the temple. This was initiated by the Pallavas and continued by the Cholas, a practice that the Champa rulers engaged in, as we have seen in the preceding section. Another way was by surrendering to the sacral power and promoting a central cult when the ruler became its agent. Chattopadhyaya (*ibid*.) refers to the Jagannatha cult here.

Although the circumstances are completely different, can we assume that Bhadreśvara or Śiva became a royal cult for the Champa rulers in Thu Bồn Valley, Kauthara and Panduranga? In Indrapura they were donating to Buddhist *viharas* although donations to Bhadreśvara and Brahmanical deities continued. I am arguing that the Champa epigraphy of different families of rulers who issued inscriptions in Mỹ Sơn and other parts of central Vietnam, in Phan Rang and Nha Trang in south Vietnam and in Dong Duong, north of Mỹ Sơn, is reflective of a process of legitimation. The most striking aspect is the bestowing of elaborate riches and embellishments to the temples as well as Buddhist establishments seen in Indrapura. During the early medieval period major temple centers came up in different parts of India, which, as mentioned above, came to be associated with state formation and the process of legitimation, reinforcing the networks between the temporal and the sacral sphere. These linkages were of many kinds, and the historical processes in which they are situated are varied (Chattopadhyaya 1997).

In the case of Champa we are not in a position to probe into the question of whether such diversities existed, for want of evidence. But what remains unchallenged is the immense material prosperity and power that the temples wielded. They were exempted from revenues and given huge donations of land

with kosthāgāras or granaries, devadāsīs and slaves. The rulers, besides making these donations, were claiming high ancestry, associating themselves with mythical ancestors like Bhrgu, as seen in their elaborate eulogies in the epigraphy. The making of a 'self-image' of a ruler through genealogies and elaborate *praśatis* in epigraphy was augmented from the post-Gupta period (post-fifth century CE), and became impressive during the early medieval period. Moreover, the Champa rulers were upholding varnāśrama-dharma according to Dharmasastric ideals, maintenance of which was seen to be akin to maintenance of social order. Dharma was seen as the source of kingly power in the Indian context, and through this a subject population was sought to be created that would not challenge authority (Sahu 2013: 191). The ideology of varna was a necessary component of Dharma, and it was necessary for ruling elites to enforce its perpetuation in order to acquire legitimacy. Legitimation also meant incorporation of local customs and traditions, which is seen in a few and sparse references to *nāgarāja* or serpent-king acting as protective deity of a natural spring and to human sacrifice. The introduction of Cham portions in inscriptions from the eighth to ninth century CE onwards was perhaps meant for the local population, which showed the intentions of the ruling elite to expand the base of the subject community and thereby gaining their sanction. Important information like specific measures of land donated to the religious establishments and their territorial limits were now mentioned in Cham, and strict instructions were laid down for them to follow.

Conclusion

This brief survey of Champa polity touches upon two phases—the first-fourth centuries CE and the fifthtenth/eleventh centuries CE. Any reconstruction of a 'polity' of Early Champa from the first-fourth centuries CE is limited by sparse archaeological data. No traces of urbanization or defense structures are seen, structural remains are meager, and when present they are in a disturbed state. Evidence of 'Indian influence' is weak. However, it is undeniable that there was a nascent political formation.

Epigraphy becomes the principal means of reconstruction when not much information is forthcoming from archaeology. Formation of independent, often competing principalities/kingdoms may be seen from the fifth century CE onwards, as has been correctly argued by Southworth (2004) and Vickery (2005). The lineage of the first king is unknown; we are only aware of the time when the first kingdom was established in the Thu Bồn valley, and there is a dearth of information on the bureaucratic machinery of the kingdom or on its functioning apparatus. Limited information on bureaucratic machinery appears in a few post-eighth century CE inscriptions. In the absence of systematic archaeological research, the structural manifestations of these later kingdoms also remain elusive. Archaeological data are limited to studying architectural styles of *kalan*/towers, sculptures, terracotta artifacts used for architectural decoration. Citadel remains at Chau sa, Cổ Lũy and Thanh Hồ have been mentioned in excavation reports (Yamagata 2007). However, no integrated knowledge can be formed based on this, as the research remains largely isolated and fragmentary. Thus, the functional aspects of these kingdoms elude our understanding.

What can be cogently argued for is a process of legitimation that the rulers engaged in from the very beginning of formation of these kingdoms. Chattopadhyaya (1997) has shown with Indian examples how legitimation is not only confined to rulers witnessing a transition from pre-state to state society, but is also a common phenomenon in complex state societies. What cannot be undermined is the strong Brahmanical/Sanskritizing influence so evident in epigraphy, art and architecture, but this is not to be interpreted as full-fledged support for the 'Indianization' theory. The agencies of 'influence' continue to elude our understanding. I agree with Kulke (1990) that we need to think more in terms of convergence. Perhaps there exists a greater scope to toy with this idea in the realms of art, architecture, folklore and linguistics, which are yet to be seen in this light.

Acknowledgements

I am grateful to the organizers of EurASEAA14, particularly Helen Lewis, for their warm hospitality and wonderful ambience which made the conference a grand success. The funding support helped to make things easier. I thank the organizers of my session, Stephen Murphy and Matthew Gallon, for accepting my paper for presentation. The writing of this would have been impossible without the extremely competent summary of epigraphic data provided by my colleague Sayantani Pal. I thank Rajat Sanyal for his crucial help with the diacriticals.

A tale of two Khmer bronzecasting families, the Chhem and the Khat: how traditional bronzecasting revived in the area around Phnom Penh after the Khmer Rouge (1975-1979), and the expansion and modernization of that tradition in the 1990s: a preliminary report

Jane P. Allison

This study focuses on the revival of traditional Khmer bronzecasting after the withdrawal of the Khmer Rouge from Phnom Penh in early 1979, and ends with the fundamental changes to this earlier casting tradition which took place as Cambodia totally re-entered the global economy in the 1990s. The article forms part of an on-going project: a comparative history of bronzecasting across mainland Southeast Asia. The casting of large seated Buddha images, that is, images over one meter across the knees, a genre for which there was a large market after the widespread destruction of religious images by the Khmer Rouge, is the vehicle chosen here to follow the topic above. This article also demonstrates an effort to preserve some of the history of two important families of casters – the Chhem family, which was most instrumental to the revival itself, and the Khat family who, beginning with the older tradition of casting employed by the Chhems, adopted modern techniques to save time and effort, which replaced major practices of the older tradition. The article is the product of numerous discursive interviews and on-site studies of casting techniques employed by workshops since 1998. Significant motivation for the research was the question of how, before modern hard soldering, after casting the metal parts into which a large sculpture is cut to facilitate the casting process, these parts were securely joined to reform the complete image. Two variations of a type of mechanical attachment, apparently known almost solely to casters, were discovered to be one of the means by which the joins of two parts were stabilized.

Introduction

To date no Khmer caster has recorded in print the techniques used in casting, nor have generational histories of casting families been written. Techniques that are or have been used must be discovered by the researcher. Today, a caster's knowledge often dies with him when no family member wishes to continue the profession. This article is designed to address, in brief, both of the issues above. For clarity and brevity one genre of casting, that of large seated Buddha images over one meter across the knees, has been chosen to illustrate both the revival of traditional casting practices after the departure of the Khmer Rouge, and the loss of three major traditional techniques in the transition to modern methods that are both easier to use and save time and expense. For articles on other aspects of the project, including bronzecasting in Thailand and Myanmar, and the production of the Equestrian Statue of King Ang Duong at Ponhea Leu, Cambodia, see Allison (2018) and Allison and Allison (2550 [2007], 2005).

Bronzecasting (Kh. *rumleay samret; slor longhan* and/or *slor sporn*) is used as a general term to describe casting in a number of copper alloys (Kh. ancient: samret and longhan; Kh. modern: *sporn*). The alloy employed today is usually brass, in which the principal additive to copper is zinc. In a true bronze it is tin.

The revival of the teaching of casting at the then officially named *Sala Vichetsilpa Khemera* (also called *sala rajana*), the School of Plastic Arts at the Royal University of Fine Arts in Phnom Penh is not discussed here. Bronzecasting in the School was taught only by lecture and an occasional demonstration by an urban caster in the outskirts of Phnom Penh when the revival of Khmer casting actually occurred. The teacher at the School at this time of revival was Rath Sann (d. 2001), actually a caster who also had a diploma from the school. It is noteworthy that a graduate of the School who eventually became a teacher then went to the countryside workshop of the Khat family to gain practical experience.

In Cambodia, images larger than one meter across the knees were cut into parts to facilitate the casting process. Surface examination of images cast before the 1990s can reveal seams of joined parts closed by lead solder. Lead solder is, however, too weak to stabilize a join permanently. In Cambodia, before the availability of hard soldering during the 1990s, the means employed to stabilize joins was normally mechanical. Another consideration of the caster was to make mechanical joins as invisible as possible to the worshipper. Those described here are in the interior of the image. The two variations of one type of mechanical attachment discovered during the research were, apparently, known solely to the casters who used them. The size of the statue dictates how it must be cut, so it must be carefully thought out prior to cutting into parts. As mechanical joins take time and exactitude to be made correctly, the necessity of making them in the period prior to the 1990s may have tended to limit the size of images.

The article first describes the main features of the 'direct method' of lost-wax bronzecasting of large statuary using clay. This is followed by a brief history of the Chhem family together with the discovery of one version of a type of mechanical attachment they used to join parts of a statue, as well as a second version of the same type, used to join two parts of heads of very large images by a former assistant to Chhem Toeum, but for larger images than known to be made by Toeum.

The 'direct method' of Khmer lost-wax bronzecasting for large seated Buddha images

The lost-wax process of bronzecasting in Cambodia using the 'direct method' has long been part of the tradition of Khmer casting. The lost wax or *cire perdue* (Fr.) method of bronzecasting can be used with either the 'direct' or 'indirect method' of casting. In the 'direct method' the thin wax layer with details of the modeled sculpture, that is the original model, is melted away during the casting process, and therefore is irrevocably 'lost' and cannot be exactly replaced in the event of a failure in the casting. It is risky but takes less time than the safe 'indirect method', which preserves the original sculpture by molds taken from it before casting. Both the Chhem and Khat families, who were the main sources of information for this article, used the 'direct method'. An excellent and comprehensive entry on metal casting is available from Erkiletian (2004). This method is different to the indirect method of Khmer bronzecasting, in which the original image or its parts are preserved.

First, a hollow clay core is built up in layers, each partially dried before the next layer is added. The layers are modelled according to the contours of the desired image. This core supports a thin layer of wax, which is the original model. The final details are inscribed in or added to the wax. Normally, at this stage in the casting process of a large image, the image is sawn into parts to facilitate the casting. The cutting process results in the loss of at least the width of the saw from the image, but usually there are more losses from both the wax and core layers. Before the availability of hard soldering in the 1990s, if not repaired, these losses would be visible along the seams of joins when the cast parts of an image were put back together. The master caster would decide whether these losses were serious enough to repair.

The next step in lost-wax casting is to attach wax rods to the wax layer. These form the 'runners' through which the molten copper alloy is poured, and 'risers' through which the gases in the empty spaces left by the wax can escape during the pouring of the metal. Core pins, or chaplets which, after the wax is melted out keep the walls on either side of the lost wax layer the desired distance apart, that is the thickness of the metal walls of the cast object, are little used by Khmer casters. Layers of investment, or mold, again a clay mixture, are applied over the wax layer. The final stage of the investment consists of a network of iron bands covered by a last layer of clay mix to give the investment added strength. The parts are heated for a number of hours in kilns during which the wax is completely lost, exiting through holes at the bottom of the invested part. When the invested part is ready to be cast, the wood fire surrounding it is scattered and the molten metal is poured from clay crucibles into the pour holes until both the runners are filled to the top. The head of a large image is usually cast separately.

At casting ceremonies worshippers, wanting to gain merit, often contribute precious metals, gold and silver, which are added to the copper alloy mixture in the crucibles intended for the head. After casting, when the invested part has cooled, the investment is broken away revealing the original wax model, now in metal.

It is rare that a casting does not require repairs. Some castings need more repair than it is feasible to do, and, in the 'direct method', must be completely remade, repeating all the steps noted above, but now with no reference to any part of the original three-dimensional model. There can be a number of causes of faults in castings. A chief one among them is an obstruction within the passages left empty by the loss of the wax, such as collapsed parts of the passage walls, and foreign objects. The use of core pins to maintain the space between the walls will normally prevent collapse but is not in high favor among Khmer casters as they can cause extra work. Major faults in a casting can also result from too much hot metal flowing over the same point, leaving a void. Invested objects can explode if they become too hot. Faults can result for a number of reasons; only a few are mentioned here.

If it is desired that a commission be completed exactly according to the original model, the 'indirect method' of bronzecasting must be used (e.g. see Allison 2018). After making repairs, the core is usually removed. The parts are then joined to reform the full image. Before hard soldering and electric burnishing were available, in the 1990s the parts were normally joined mechanically, and the polishing of the metal surfaces was done by hand.

The Chhem family

Until the 1860s, the former capital of the Cambodian royal dynasty was at Oudong, about two hours by car north of the present capital at Phnom Penh. After the court's move to Phnom Penh some independent casting workshops that had once served the court of Preah Bat Ang Duong at Oudong remained in the area. The Chhem family of casters had lived in the Oudong area for generations, and their accumulated artistic and casting expertise had been passed down generation to generation. In 1954 Ros Chhem, a farmer and part-time caster living in *phum* (village) Spean, Kandal Province, who had previously worked upon royal commissions, was chosen for the important commission of a seated Buddha image to celebrate the 2500th Anniversary of the Buddhist Era (Gautama Buddha's Nirvana) in 1956/57 in Phnom Penh. The cast brass image, now lost, that he produced at his home workshop measured c. 0.5 meters across the knees and was placed in the old Relic Stupa in front of the railroad station in Phnom Penh. If images were small enough, not measuring more than 0.7 meters across the knees, their patrons could transport them to their designated vat (pagoda). Ros Chhem died in 1977 aged eighty-five, but the artistic and technical expertise of the family was deeply ingrained in his three sons: Toeum, Chhorn and Diep. In contrast to his brothers, Toeum, who died in 1990 at the age of 63, was artistically gifted and had assisted his father as a caster, thereby becoming the best-known of the brothers. During the Khmer Rouge years, the Chhem family had reverted solely to farming, but after 1979 Chhem Toeum resurrected his bronzecasting heritage. During the Khmer Rouge era most vats had been pillaged of their images, therefore commissions for religious images mushroomed, leading to a rapid revival of bronzecasting, especially around Phnom Penh. In 1979, Toeum and his family moved to more comfortable accommodation at Toul Ampel on the Mekong River, a location that had the advantage of being closer to the capital.

By 1980-1981 Toeum began taking on other assistants in addition to his brothers. Two assistants who later became casters in their own right – Om Orn and Sann Song – both living in *phum* Phsar Daek (iron market), a community close to Oudong, will be discussed later. By 1983 Toeum was so well-known as both a sculptor and a caster that he was asked to teach at the School of Plastic Arts (*sala rajana*) (as noted above), but he preferred to remain in the countryside. Increasingly, he became a full-time sculptor

and caster of Buddha images. In the workshop Toeum was the artist and created the contoured core of the image and its details in the wax layer, while his brothers made the clay investments of his models. Toeum did most of his casting projects at his home workshop, but, as some of his patrons wanted large, non-portable images, he was also commissioned to work at the *vat*. As the economy was poor in the 1980s, he made less-expensive cement Buddha images, such as that at *Vat* Tep Pranam in Oudong, as well as other bronze objects such as pagoda bells (*chuong*).

Six of Toeum's Buddha images were discovered between 2009-2011 (Table 1). This was made possible through conversations with his family, and surveys by the author. The family was also able to supply a black-and-white photograph of one of his Buddha images, which showed that Toeum's style was quite distinctive. It was known that a characteristic of all his larger seated Buddha images was a separately cast brass base with a lotus motif and an inscribed date, and that he cast his larger images in parts. As hard soldering of joins with copper alloy was not available in Cambodia in Toeum's lifetime, he cut his large images into parts and joined them by the mechanical means available to him to reform the full image. With the exception of one Buddha image which was cast in a single pour, the other three known images by Toeum found in Phnom Penh, which can be viewed only from a distance, show some indication that they were divided into two parts to facilitate casting. It was not easy to verify the inscribed dates of the three seated Buddha images placed on high pedestals. This was resolved by the pagoda monks, who obligingly found ladders which someone climbed and reported back; future study of these may provide a clearer picture of Toeum's casting techniques. On the other hand, the surfaces of the two images in Kampong Cham, which were cut into three parts, were placed at worshipper level and could be studied closely. To clarify to a degree what the surface details of the Kampong Cham images may indicate, a description of one type of interior mechanical join that is known to have been used by Toeum follows.

Table 1. Descriptions of six Buddha images by Toeum

The four Buddha images with their separate cast pedestals in Phnom Penh

1982, Vat Svay Porper, kot (living quarters – here, of the head monk), 0.5 m across the knees, earthtouching gesture in which the right hand extends downward, palm inward to touch the ground or base of a throne with the fingers (Skr. *bhumiparsa mudra*) and with the left leg folded under the right leg (Skr. *virasana* position), cast in one piece, highly polished (Figure 6 left)

The following three principal images are placed high on cement pedestals (Kh. *balang*):

1988, *Vat* Koh, *preah vihear* (Buddhist temple), 1.2 m across the knees, *bhumiparsa mudra* and *virasana* position, cast in two parts as an indication that a horizontal join made across the torso at a level slightly above the elbow is visible; painted gold in a later restoration (cast at *Vat* Svay Porper)

1989, *Vat* Svay Porper, *preahvihear*, 1.2 m across the knees, meditation mudra (P. *samadhi*) and *virasana* position, cast in two parts based on an indication of a horizontal join across the torso at a level slightly above the elbow; highly polished

1990, *Vat* Sampov Meas, *preah vihear*, 1.2 m across the knees, *bhumiparsa mudra* and *virasana* position, cast in two parts based on an indication of a horizontal join across the torso at a level slightly above the elbow; highly polished (Figure 6 right)

The two Buddha images in Doeum Chrey, Kroch Chhmar commune, Kroch Chhmar district, Kampong Cham province

1985-1987, Vat Doeum Chrey, *preah vihear*, both 1.47 m across the knees; in a special meditation mudra (Pali, *samadhi*), (*virasana* position), each on separate cast lotus leaf pedestal and with finials resembling a flame at the tops of their heads

The kanlas or 'pin method' used to attach parts of a large statue

To partially clarify what was visible on the surface of Toeum's Kampong Cham seated Buddha images, it was fortunate that in 2009-2010 the author had discovered one variation of a type of internal attachment used by Chhem Toeum, which continued to be used by a former assistant, *jeang pom* (caster) Song to *c*. 2010: the *kanlas*, or 'pin' type of attachment. *Jeang* Song, who lives in Phsar Daek as the Chhem family once did, worked with Toeum between 1986-1990, and, like Toeum, produces good quality cast sculpture. It is due to his work that it is possible to illustrate the steps in the production of an internal type of attachment used by Toeum to join parts in the re-creation of the original total image. The type of *kanlas* known to have been used by Toeum to join to cast parts will be described here. It is limited to the production of just one such connection and is illustrated by photographs of the steps in its formation (Figures 1-3) used by *jeang pom* Song (caster) at *Vat* Prasat in Kandal province.

Before casting a part, a pattern, which can be squarish or rectangular with a hole through it, is cut into the core next to the wax layer of the two parts to be joined. It is cut into the core at the top of the lower

part and at the bottom of the core of the upper part, carefully aligning these units, one above the other. On the exterior, the positions of both of these units are marked by vertically inscribed lines on the wax. Using a heated metal instrument (Kh. *kbal moin*), these patterns are filled with wax (Figure 1, left). After casting, these units are integral with the wall of each cast part (Figure 1, right). The number of attachments needed to join two parts depends upon the contours of the parts. To join the parts, they are reassembled, one above the other, by aligning the internal units of the attachments by means of the inscribed lines on the exterior surfaces of the cast parts (Figure 3). Working from the interior, a threaded bolt is inserted through the holes of both attachments, connecting the two cast parts. A nut added to the end of the bolt is tightened to draw the parts together, narrowing the seam between the two parts as much as





Figure 1. The kanlas, or 'pin method': (left) wax being applied to a pattern of a kanlas type of attachments cut into the core next to the wax of a part; (lower right) the attachment after casting the part; (upper right) head with the corresponding attachments in the neck area. Photos: J.P. Allison.





Figure 2. Completed kanlas with bolts tightened by nuts: (left) at a horizontal cut of a statue; (right) at a vertical cut. Photos: J.P. Allison.

possible (Figure 2). Instead of a threaded bolt, an unthreaded handmade copper bolt or nail can be used to connect the two units of the attachment. From the interior of the image, their ends are hammered to one side to tighten the seam of the join. The narrowed gap at the seam is then closed with lead solder (Kh. *psah somnor*) (Figures 4 and 5). To close the seam with soft lead solder, the metal surface is first cleaned with acid. Then, using a heated iron tool and a lump of lead, drops of lead are fed into the gap until no more will enter. The excess lead is abraded off the surface.



Figure 3. A demonstration of the assembly of an image with both horizontal and vertical cuts which are not yet connected by the kanlas method. Photo: J.P. Allison.



Figure 4. A demonstration of using droplets of lead to solder together copper alloy parts of a small casting genre: (left) soldering together two copper alloy parts of a small vessel using a heated iron tool (kbal moin) and droplets of lead solder; (right) detail of Buddha with lead soldered joins. Photos: J.P. Allison.



Figure 5. Detail, well-made join of the kanlas type with the seam sealed with lead solder, Buddha image by Chhem Toeum in the preah vihear, Vat Svay Proper. Photo: J.P. Allison.



Figure 6. Buddha images by Toeum: (a) small image, 0.5 meters across the knees, in the kot of Vat Svay Porper (b) image 1.2 meters across the knees in the preah vihear of Vat Sampov Meas with horizontal cut. Photos: J.P. Allison.

The two Buddha images in Doeum Chrey, Kroch Chhmar commune, Kroch Chhmar district, Kampong Cham province

For his two largest images (1.47 meters across the knees), Toeum was forced to cut the images into three parts for casting. From the horizontal cut across the torso he cut vertically down the front of the legs and down the back between the buttocks. A close study was made of the surfaces of both images (Figure 7). One image was a slightly less successful cast, noticeable mainly by flaws on the front of the *sanga dej* (Skr.) which were filled with lead solder, marring its normally smooth surface.

In planning the castings of the two images it is obvious that Toeum was highly concerned about the beauty of these two images to the spectator and wished to make the joins of the parts as little noticeable as possible. The *sanga dej* was his principal vehicle for doing so. In the front of both images an extension of the *sanga dej*, cast with the torso, conceals the central area of the horizontal cut as well as the beginning of the vertical cut (Figure 7a). The vertical cuts down the legs each include a lower arm and hand and are identical in the two images. Beginning from the horizontal cut across the abdomen (centrally concealed by the extension of the *sanga dej*), up through the hands (which conceal part of the cuts), the cuts then descend down to the bottom of the front of the image (Figure 7b).



In the rear views of both images, vertical cuts between the buttocks are hidden by the *sanga dej*, but in different ways. At the back of the better-cast image (Figure 8b) an extension of the *sanga dej* had been cast with the upper torso, and lead-soldered to both vertically cut parts beneath

b



Figure 7a-b. (a) The better cast Buddha image by Toeum, Vat Doeum Chrey, 1.47 meters across the knees; (b) detail of lesser quality Buddha at same vat, frontal view of the horizontal join and vertical leg join. Photos: J.P. Allison



Figure 8a-b. (left to right) Details of the better cast image by Toeum, Vat Doeum Chrey: (a) proper left side, front, horizontal join; (b) proper right side, back, horizontal and vertical cuts concealed by a part of the sanga dej cast with the torso. Photos: J.P. Allison

it, concealing that part of the vertical join. A reddish copper-colored insert appears in both sides of this extension of the *sanga dej* (Figure 8a). At the front of both images, two diagonally placed reddish copper-colored inserts are found on both sides of the extension of the *sanga dej* that was cast as part of the torso; this fits nicely behind the hands, covering a part of the horizontal cut of the torso. At the back of the less well-cast image the lower part of the *sanga dej* had been cast as a whole, with the proper right vertically cut part of the buttocks and, thereby, when re-assembling the image, it concealed the vertical cut as it extended over it and was attached to the proper left vertical part.

It was the vertical cuts down the front of the legs that Toeum could not conceal. Closed with lead solder and with inserts on one side of the cut on one image, and the other side on the other image, the joins down the fronts of the images are highly visible. It appears that the modifications of the parts above required not only a well-considered plan for these images, but certainly excellent casting techniques in order for the parts to fit together. This relatively complicated casting procedure indicates that foremost in Toeum's mind was the beauty of his images. As noted above, it was the *sanga dej* that provided the principal means to achieve his desire.

A type of kanlas for two parts of the head of a very large image

At the top of the heads of very large images another variation of the *kanlas* method (<code>numnemble</code> head *kanlas*) has been used for images at least two meters across the knees, larger than any known image by Toeum. The method was described and drawn by Om Orn, a retired caster living in Phsar Daek. He was a former assistant to Toeum who had become a caster in his own right, but whose sculptures did not match the casting quality of Toeum's images. During the many interviews with Om Orn since 1998 he never mentioned the word *kanlas*. Only in 2012, the year of his death, when the author asked him to discuss

the general subject of kanlas, did he discuss a special type of kanlas used in heads of very large images, supplying a drawing to supplement his explanation (Figure 9). The secrecy of casters is a known trait worldwide. In this process the top of the head (above the forehead) is cast as a separate part. This part is cut off the completed core of the head at the hairline. While the clay core is still moist, two round holes penetrating vertically are made in both the core of the top part of the head and in the core of its lower part, one directly above the other.



Figure 9. Drawings made by Om Orn, a caster in Phsar Daek, showing a type of kanlas used to connect the two cast parts of the head of a very large image. Image: J.P. Allison.

After the core has dried, a wax layer is laid on the exterior of the head top, and two attachments are cut into the top of the core of the lower part of the head. Rolled wax-resin rods, long enough to extend from the wax layer at the top through and beyond the holes of the attachments in the lower part of the head are placed next to the wax layer of the head top. After casting the head top part, the rods are integral with the inner wall. In its final cast form the top part of the head includes the three-dimensional oval characteristic of the Buddha (Skr. *ushnisha*) and, possibly, a symbol such as a flame or crown. To attach the head top to the lower part of the head, the long metal rods integral with the top of the head are inserted into the two attachments of the lower part of the head. In the drawing each appears to have been hammered to its closest side of the head to tighten the join.

The Khat family

As with the Chhem family, the Khat clan are descendants of generations of casters. They were originally from Yol Tong in Takeo Province, southeast of Phnom Penh, where Khat cast phtel (drinking bowls) and, less frequently, small Buddha images measuring less than 0.5 meters across the knees. His son, Khat Bong (1928/1929-2014), assisted Khat by hand-polishing the images, an unrewarding task. In the late 1950s Khat Bong left Takeo Province and found work casting *phtel* in Bekthlang, a community near the Oudong area. During this period, Khat Bong married a woman from Oudong and, according to country custom, moved in with her family. Following the marriage, his father moved permanently to Phsar Daek. Khat had personal reasons to leave Yol Tong, but he also knew that good clays for casting were more plentiful around Phsar Daek. Until Khat's death in 1972, the father and son cast full-time in Phsar Daek, competing successfully with the *phtel*-making families already living there. During the Khmer Rouge years Khat Bong was ordered to cast utilitarian objects such as large cooking pots (Kh. kteah) in aluminum. Khat Bong's son, Khat Pov, was born in 1958, and in 1979 married a woman who owned property with good clays in Bekthlang. Khat Pov moved in with her. In the same year, he joined the Royal Cambodian Armed Forces on a full-time basis (he is still in the army part-time – a colonel with five stripes). During the 1980s and early 1990s Khat Pov and his father worked as a team casting *kteah* in aluminum, hammering gongs and, occasionally, casting seated Buddha images 0.5-0.6 meters across the knees.

In 1990-1991 two seated Buddha images for *vats* in Phnom Penh, whose commissions had been previously given to Chhem Toeum, were transferred to Khat Bong. In these, his first commissions for large Buddha images, he collaborated with his brother, Khat Kem (now deceased), and Ieng Saing (also now deceased).



Figure 10a-b. (left to right) (a) Buddha images by Khat Bong and Khat Pov: (a) Vat Nun Mony 1.3 meters across the knees; (b) Vat Steung Meanchey, 1.47 meters across the knees. Photos: J.P. Allison

The latter was a distant relative who had graduated as a sculptor from the School of Plastic Arts at the *sala rajana*. Khat Bong's son, Khat Pov, also participated in the projects.

It is impossible to discern the quality of the two Buddha images produced by Khat Bong, where they were cut into parts, and even some of the details, as not only were they permanently joined to their cement pedestals by a pedestal-maker, but also have been heavily painted. The 1.3 meters knee-to-knee *bhumiparsha mudra* (Skr.), or earth-touching gesture Buddha image in the *virsasana* position produced for *Vat* Nun Mony (Figure 10a) was formerly in the old *preah vihear* but is now in the *kot* of the head monk. It is said to have been cast in two parts. The 1.47 metres knee-to-knee *bhumiparsha mudra* image in the *virasana* position at *Vat* Steung Meanchey (Figure 10b) is said to have been cast in three parts. Both images were joined mechanically by the *kanlas* method using the bolt and nut, the joins concealed by lead solder. Each of the images was produced at its designated *vat*. After these two projects Khat Bong and Khat Pov went their separate ways. It is said that Khat Pov was urged by his father to specialize in the production of Buddha images. From this time on Khat Pov produced Buddha images either alone or with the help of workers, while his father cast special order *phtel* of large dimensions and pagoda bells (*chuong*).

In 1993 Khat Pov started his own casting business in Bekthlang and began to train young men to become casters. He had seven daughters and one son. Seven of his sons-in-law learned bronzecasting of large images at his foundry. Over the years six of them became casters. His workshop grew to be the largest and most important workshop in the area near Oudong. As the economy improved in Cambodia after 1993 with Sihanouk again on the throne, and new tools and techniques began to appear, Khat Pov adopted those that saved time, energy and expense. In 1995, when the electric burnisher with its various attachments became available, it was an immediate success among casters as they could abandon hand polishing. Khat Pov learned oxyacetylene soldering using copper alloy when he was hired to cast a work for the Royal Palace, and at the same time learned the 'indirect method' of casting, and the use of core-pins to hold the dimensions of the empty space left by the wax constant. He adopted soldering with copper alloy, abandoning the exacting process of mechanical joins, but preferred not to use either of these approaches, continuing to cast using the risky but traditional 'direct method'. Cast-in repairs, a

time-consuming process that is a repetition on a much smaller, at times minute, scale of the steps of the lost-wax casting process, was dropped except for repairs at critical spots, such as the face of an image. Khat Pov's family workers resisted learning the method as it required too much exacting work.

Growing with the improving Cambodian economy, Khat Pov produced a series of larger and larger Buddha images at different *vats*, spreading his reputation. He built upon his experiences and took up challenges to make increasingly larger Buddha images by the 'direct method'. By 1995 he was becoming nationally renowned when his group succeeded in producing a good quality Buddha image three meters across the knees in the P. *samadhi mudra* at Phnom Praset. In 1998 he produced an image three meters across the knees at *Vat* Prey Boeung in Oudong, as well as other types of cast sculptures, and from 1999-2000 at *Vat* Mony Prasittipong in Kandal Province, Khat Pov finished a 3.2 meters knee-to-knee seated Buddha image, as well as two seated monks (Kh. *preah sang* and *loksang*), for the *preah vihear*.

Conclusion

In summary, the text above covers in detail a crucial period in the history of Khmer bronzecasting: how Khmer bronzecasting re-emerged in the areas surrounding Phnom Penh after the devastation of Khmer culture by the Khmer Rouge 1975-1979, and how an earlier casting tradition was modernized as Cambodia fully re-entered the global community in the 1990s. The article has been limited to the casting of large seated Buddha images, the genre which best illustrates the continuing tradition of Khmer bronzecasting as well as the principal changes to that tradition after 1993 in Cambodia, with King Norodom Sihanouk again upon the throne. Few skilled bronzecasters had survived the ravages of the Khmer Rouge, but this article provides proof that knowledge of bronzecasting using the traditional material of clay was endemic in the Khmer countryside. Casting of statues and other traditional and utilitarian items had long been a part-time practice of Khmer farmers during the dry seasons (when clay dried more quickly).

A main center for the production of larger Buddha images was around the former royal capital of the present dynasty, at Oudong. After the royal court moved to Phnom Penh in the second half of the 1860s, some casting families who had worked independently for the court remained for generations in the area. The example of the Chhem family, as discussed above, proves that in the mid-1950s, a hundred years after the removal of the court from Oudong, this area continued to be a vital center for casting, and received commissions from the court in Phnom Penh.

During the poor economic conditions in Cambodia in the years following the retreat of Khmer Rouge the Chhem family living closer to the capital began to cast large images again in the Oudong area. The demand for new metal Buddha images and replacements for those which had been destroyed was so great that it soon became a large part of their family business. Their casting techniques were, presumably, those that they had been accustomed to and had used in the mid-fifties for the Buddha image commissioned for the Relic Pagoda by the train station in Phnom Penh. It is highly likely that these methods, with some variations over time, had been used by the family since the period when the court was based at Oudong. Moreover, it is probable that some of their practices can be traced back to a still-older casting tradition.

The three technical practices which have been of chief concern for this article are:

- 'Direct casting' using the lost-wax process, a tradition long practiced; a type of casting in which the original wax model, or its parts, is lost in the casting process.
- Joining: in Cambodia a large image is normally cut into parts to facilitate the casting process; to reform the image the parts must be joined; before modern hard soldering, strong joins were

usually executed by mechanical means, preferably those which did not distract attention from the image itself. Two variations of the *kanlas*, or 'pin method' were discovered and described above, fortunately preserved by casters who had once served Chhem Toeum. When hard soldering became available, the exacting method of mechanical joins was dropped.

• Hand-polishing of metal surfaces: this time-consuming technique was dropped when the electric burnisher became available.

After Chhem Toeum died in 1990, the Khat family, also living in the Oudong area, was chosen by the Chhem family to take over his unfulfilled commissions. Under Khat Pov's guidance and his courageous and competitive personality, he produced ever larger images, with his workshop becoming the largest in the area, and greatly expanding the relatively small revival initiated by the Chhem family. Until c. 1993, Khat Pov's workshop continued to join parts by mechanical means and polish by hand. After his introduction to hard soldering of parts with an oxyacetylene torch and to an electric burnisher for polishing, these laborious and exacting techniques were quickly dropped. Using the 'direct casting method', Khat Pov progressively produced larger and larger seated Buddha images with teams he had trained. He had faith that his teams could successfully complete any size of seated Buddha image for which he had accepted the commission. He had been exposed to the safe 'indirect casting method', which preserved the original model for reference, but as a conservative Khmer caster he preferred to continue to cast by the traditional 'direct method' that he and his teams knew so well. His last commission using this method was the 3.8 meters knee-to-knee (4.2 meters high) Buddha image for Vat Teuk Thla located in Sangkat Teuk Thla, Khan Sen Sok, along Russian Confederation Boulevard (St. 110) in Phnom Penh. At the time it was the largest seated Buddha image of the earth-touching gesture (bhumiparsa mudra) and virasana position in Cambodia, and the last large image to be made there by the 'direct method'. Today the long tradition of 'direct casting' has ended. All Khmer casting teams producing larger images now use the 'indirect method' in order to preserve the original model, in the event that the casting as a whole or part may be a failure and ensuring that the customer can feel confident that the commission will be completed.

Acknowledgements

I would like to express my gratitude to EurASEAA 2012 for accepting my paper for the Living Heritage panel in Dublin. The paper was made possible only through the unfailing long-term support of the Ministry of Culture and Fine Arts in Phnom Penh. Olivier de Bernon, EFEO, formerly in Phnom Penh and now in Paris, has long maintained interest in bronzecasting projects and has been an invaluable source of information, along with François Lagirade, EFEO, formerly in Thailand and now in Paris, and Bertrand Porte, EFEO, National Museum of Cambodia, Phnom Penh. Heng Sreang, a university lecturer, fellow researcher and post-doctoral candidate in the UK, has provided very helpful suggestions. In addition, I wish to thank my various assistants who translated the information given by Khmer-speaking people during the years 1998-2012. I wish to especially mention La Sunnara (retired official at the Cambodian Red Cross), Mang Sohan (an undergraduate at Pannasastra University of Cambodia, Phnom Penh), Tykheavuth Sok (a graduate of the Department of Archaeology, RUFA, Phnom Penh and librarian at RUFA Library) and Tieng Hong (a part time assistant), who have worked with me most recently. I am grateful to anonymous referees for their comments. Lastly, but not least, Ann H. Allison, PhD, who has read this article at various stages and commented upon it.

The history and distribution of the free-reed mouth-organ in Southeast Asia

Roger Blench

One of the most distinctive musical instruments of the Southeast Asian area is the free-reed mouth-organ, best known as the Chinese shēng, and the origin of the European harmonica. It is also one of the few instruments for which there are extensive archaeological materials, as bronze skeuomorphs of gourd originals were made in China from at least the Dian period. In addition, some more classical instruments survive as grave goods in China, and the free-reed mouth-organ is often represented in mural art in Burma and Thailand. This paper proposes an organography of this instrument, showing how it evolved and diffused over time, bringing together archaeology, ethnography and iconography.

Introduction

The story of the origin of the European free-reed family of instruments following a visit to the St Petersburg Museum by Christian Gottlieb Kratzenstein (1723-1795), who reputedly first saw a Chinese *shēnq*, is too well-rehearsed to be worth repeating in detail. The first unambiguous description of a freereed instrument in a European text is Mersenne's Harmonie Universelle (1636; Figure 1). An instrument clearly resembling the Thai/Laotian khaen is depicted, although the description gives no indication that Mersenne knew that the instrument utilized an acoustic principle hitherto unknown in the West. Mersenne attributed the instrument to 'Indiens' and proposed to add a windsack so that it could be played like a bagpipe. The same is also true of the picture of the Asian mouth organ shown in Bianchini's (1742) De Tribus Generibus Instrumentorum Musicae Veterum Organicae Dissertatio, said to have been brought to Rome in 1685 by Pater Phillippus Fouquet. Likewise, the mouth-organ shown in Bonanni's Gabinetto Armonico (1722) is erroneously depicted as having flue pipes in the manner of a pipe organ, showing that the illustrator was unclear about the internal workings of the instrument. The Royal Danish Kunstkammer had an example of a *khaen* in its collection in the seventeenth century, described as 'an Indian organ made of cane', first mentioned in an inventory dated 1674 (Finsterbüsch 1961). Amiot (1779: 78 and 82, pl. vi.), in his justly celebrated Mémoire sur la musique des Chinois, is probably the first author to describe its workings correctly.

In their source area, the distribution and organology of free-reed mouth-organs is far from being wellunderstood. Recent (*i.e.* since 2000) possibilities of access to rural Myanmar and China have made it possible to map types of mouth-organ in more detail and to reach some conclusions about their possible history. Apart from synchronic ethnography, it is possible to draw out the history of the free-reed mouth-organ from archaeological and literary sources. The remains of a mouth-organ, alongside the more famous arrays of tuned bells, were found in the tomb of Marquis Yi of Zeng, in Suixian, Hubei, dated to 433 BC (So 2000). Metal wind-chests, which are skeuomorphs of gourds, occur in archaeological sites in Yunnan as far back as 200 BC (Figure 2).

Existing reviews of the free-reed mouth-organ are somewhat limited (e.g. Finsterbüsch 1961; Miller 1981; Schwörer-Kohl 1997). This paper looks at the history, morphology and distribution of the free-reed mouth-organ across East and Southeast Asia, and considers a number of transitional instruments which may be relevant to its evolution. It concludes with some hypotheses about the origin and spread of the mouth-organ. The principle of the free-reed was confined to a specific geographical area in Southeast Asia before its worldwide diffusion in the last two centuries. Free-reed instruments are



Figure 1. Depiction of a mouth-organ (Mersenne 1636: 308).

Morphology

Figure 2. Bronze wind-chest of free-reed mouth-organ imitating a gourd. China, Warring States period. Photo: R. Blench, courtesy Yunnan Provincial Museum.

widely distributed and morphologically highly diverse, pointing to several millennia of evolution, as is confirmed by archaeological evidence.

In-depth research in rural areas was impractical in countries such as Myanmar and Laos until the 2000s, while the results of Chinese scholarship are becoming increasingly available. At the same time, pressure on highland populations to relocate and dispense with aspects of traditional culture such as dress and shifting cultivation will also subject them to cultural dislocation and thus increase



the influence from radio and television and a consequent loss of traditional music. Hence, research into musical repertoires in these regions must be considered a high priority.

The images and the information that accompany this paper are of varying quality. Not all museums keep very informative records about their collections, and the conditions under which pictures may be taken also differ. Instruments are included that are of clear organological interest but for which we have poor provenances. Similarly, not all pictures were taken by scholars focusing on music, and the resolution of some images is low. Finally, technology moves on; digital images taken a few years ago are simply less clear than those taken with more recent cameras.

Free-reeds are known only from traditional societies in South and East Asia, although since their adoption into the European instrumentarium they have been dispersed all over the world in the shape of the accordion, harmonium, concertina and harmonica. Ironically, the Francophone culture of colonial Indochina has meant that the accordion has been carried back to countries such as Laos and Việt Nam. The main free-reed instruments in Southeast Asia, apart from the mouth-organ, are the transverse horn and the transverse or end-blown fingerhole pipe, where the pitch is altered by stopping fingerholes, exactly as on a transverse flute. Examples of these are the transverse horns of the Karen, depicted in some detail in Vorreiter (2009), and the *tsaaj nplaim* of Laos. The varieties of these instruments are described in some detail in Miller (1981). Unlike other reeds, the free-reed does not overblow, and as a consequence instruments have a limited pitch range. However, the potential to sound two notes on



Figure 3. Yuhan, mouth organ with pipes at right angles to the embouchure (CC at asza.com).

a single reed according to whether the air is blown or sucked can potentially increase the available notes (Picken *et al.* 1984).

The mouth-organ consists of a series of graduated pipes, each one with an individual free reed producing a different pitch. These pipes are inserted into a wind-chest, and either they end inside it, or they pass straight through it. The player blows into an embouchure connected to the wind-chest, which forces air through all the pipes simultaneously. Each pipe has a fingerhole above the wind-chest, and by stopping this hole the pipe is muted. Thus, to play an individual note, all pipes must be stopped except one. As a consequence, the mouth-organ lends itself to playing chords, and this polyphonic sound can be considered typical.

Broad descriptions of the types of mouth-organ recorded in Southeast Asia include Miller (1981), Cottingham (2002) and Blench (2017). There are four morphological subtypes in Southeast Asia: I) pipes spaced out in a circular array projecting outwards from a bottle-gourd wind-chest with a tubular embouchure; II) closely-spaced pipes in a circular array, exactly parallel to one another, with an embouchure directly in a wooden or metal wind-chest; III)

closely-spaced pipes in two parallel lines, with an embouchure directly in a wooden tubular wind-chest; IV) widely-spaced pipes in two roughly parallel lines passing through a tubular wooden wind-chest with a long tubular embouchure. Type I is the most common and morphologically diverse, since it is associated with many minority cultures in mainland Southeast Asia, and examples differ in detail, number of pipes, resonators, etc. Types II and III are associated with classical performance, Type II being the Chinese *shāng* and Type III the Laotian and Thai *khene*. Type IV is associated with the Hmong people of south China and adjacent countries. The geographical distribution of these types is considered in more detail below. A lesser-known variant on Type III has one or more rows of pipes arranged across the wind-chest, at right angles to the mouthpiece (Figure 3). Examples include the Chinese *fang shāng*, the Bangladeshi *plung* and the Vietnamese *m'buot*. The morphology of the free reed ensures that it will sound on both inhalation and exhalation, distinguishing it from other types of reed. Circular breathing used for shawms (the class of double-reed instruments like the oboe) may have first evolved to provide a continuous stream of sound natural to the free reed. However, this technique does not work with some of the related instruments described below.

Classical instruments such as the *shēng* and *sho* have no additional resonators to amplify the sound, but among the large instruments made by minorities in Thailand, Myanmar, Borneo and Bangladesh these are very common. Usually these consist of a bottle-gourd placed over the end of the pipe; in modern times these may be replaced by glass bottles, plastic medicine boxes and other scrap materials. Occasionally, rather more unusual strategies include a large transverse bamboo internode set on the end of the longest tube (e.g. Figure 4).

Free-reed mouth-organs can vary greatly in size, between the coconut-resonated *ra rai* (Figure 5), about ten centimeters long, to the immensely tall instruments of the Lisu, Lahu and Mru, where the longest pipe may be over two meters (Figure 6). Even larger instruments of Type III, with the pipes in two parallel lines up to three meters long, are found in the collection of the National Museum of Thailand,


Figure 4. Lisu fulu lae with transverse bamboo resonator, northeast Thailand. Photo: John Moore.



Figure 6. Lahu mouth organ, Thailand, courtesy Victoria Vorreiter 2009.



Figure 5. The ra rai, a free-reed mouth-organ with a coconut wind-chest. Photo: R. Blench, courtesy National Museum of Thailand.

but whether these were made for practical performance is uncertain.

All the simplest free reed instruments are idioglot, in other words the reed is cut from the same material as the pipe, as with the clarinets also found in this region (see below, Figure 30). However, once the reed is damaged or worn it is difficult to replace in a complex instrument intended for long-term use. As a consequence, almost all mouth-organs have inserted separate or heteroglot reeds. Usually these are made of bronze and look not dissimilar to the jew's harps found throughout the region. John Moore (2014, personal communication) reports that among the Hmong the lowest pipe in the gen has two or three bronze reeds in order to increase its volume. It is hard to tell how common this constructional practice is in folk instruments across the region, as it may require taking instruments apart, not a favorite with museums, or discussion with the makers.

Distribution

The following sections cover individual countries, reviewing the literature and known types of instrument occurring in each. The maps show a very approximate distribution of the types of free-

Туре	Countries/regions		
Ι	Northeast India, Bangladesh, Burma, China, Thailand, Laos, Việt Nam, Borneo		
II	China, Japan, Korea		
III	Thailand, Laos, Việt Nam		
IV	China, Thailand, Laos, Việt Nam		

Table 1 Geographical distribution of mouth-organ types



Figure 7. Distribution of free-reed organs with gourd or wood wind-chamber, Type I. Map: R. Blench.



Figure 8. Distribution of Type II sheng-type free-reed organs. Map: R. Blench.



Figure 9. Distribution of Hmong-type free-reed organs. Map: R. Blench.



Figure 10. Performance of Ya-Yueh ritual music, Warring States Period (originally Vandier 1938; reproduced from Mok 1978).

reed organ. Table 1 shows the geographical distribution of mouth-organ types by country. Figure 7 shows a composite distribution of Types I and III, mouth-organs with a wind-chamber of either gourd or wood. This excludes the East Asian *shēng* type (Figure 8) and the Hmong type (Figure 9), but includes the bronze copies of gourd wind-chambers of the Dian kingdoms. Figure

8 shows a schematic distribution of the Chinese *shēng* and its historical borrowings into Korea, Japan and Taiwan. Figure 9 shows the distribution of the Hmong-type mouth-organ (Type IV). The chequered pattern indicates that it is scattered across this region, as are the Hmong people themselves, living interspersed with other communities.

China

China has the most complex repertoire of free-reed mouth-organs, because the instrument was adapted into the classical music repertoire at an early date (Thrasher 1996). The archaeological and iconographic record is more complete than for other countries, although some early images are quite difficult to interpret. Tradition credits the invention of the *shēng* to various semi-mythical characters such as the Emperor Huang Di or the Empress Nu Gua in the third millennium BC. The shape is said to have been inspired by a phoenix at rest on its nest. The earliest written descriptions (as far back as the 'oracle bone' inscriptions of the fifteenth century BC) use the following names, all having varying numbers of pipes often arranged in crosswise rows: hé (和, harmony; small size), cháo (巢, nest; medium size, presumably because it resembles a bird's nest), and yú (竽; large size). The main types of mouth organ that have historically occurred in China are as follows:

yú (); large free-reed mouth-organ (no longer in use)

hé (<u>和</u>); small free-reed mouth-organ (no longer in use)

shēng (笙); free-reed mouth-organ consisting of a varying number of bamboo pipes inserted into a metal (formerly gourd or hardwood) wind-chest with finger holes. There are three subtypes: *bàoshēng* (抱笙) – larger 'surround' *sheng*; *páishēng* (排笙) – very large 'set in order' *sheng*; and *fāngshēng* (方笙) – 'upright' *shēng* with a rectangular arrangement of fourteen pipes in two rows at right angles to the mouthpiece

húlúshēng (葫蘆笙, SC 葫芦笙); free-reed mouth-organ with a gourd wind-chest (used primarily in Yunnan)

húlúsī (葫蘆絲, SC <u>葫芦丝</u>); free-reed wind instrument with three bamboo pipes which pass through a gourd wind chest; one pipe has finger holes and the other two are drone pipes (used primarily in Yunnan).

The *shēng* can be seen in pictographs dating from 1200 BC with a gourd wind-chamber and looks very similar to those in the current southern Chinese (as observed in the collections of Kunming Nationalities Museum) and northern Thai *naw* (as depicted in Miller 1985). The 'oracle bones' of the Yin dynasty (ending eleventh to twelfth century BC) mention it under the name *ho* (a small *shēng*); and the *Shījīng* <u>j持經</u> (Book of Odes) attests to its use before the time of Confucius (551-479 BC), who is believed to have played the instrument (Karlgren 1950). Various poems in the Book of Odes refer to the use of the mouth-organ in drunken celebrations: "The lutes are struck, the organ blows, till all its tongues in movement heave" (Decade of Lu Ming 鹿鳴之什); "The drums loud sound, the organ swells, their flutes the dancers wave" (Decade of Sang Hu 桑扈之什).

The earliest find of an actual instrument is in the tomb of Marquis Yi of Zeng, in Suixian, Hubei, dated to 433 BC (Guangsheng 2000). This instrument has a wind-chest of lacquered wood imitating a gourd, and two arrays of pipes at right angles to the direction of the mouthpiece, corresponding to the *fāngshēng* ($\hat{\mathcal{T}}$) $\hat{\mathcal{T}}$). Slightly later instruments have been found in the Han tombs, representing a variety of construction techniques (Mok 1978). The earliest pictorial images of the mouth-organ are those on Chinese bronzes, where it is shown as part of a ritual orchestra. Figure 10 shows a performance of Ya-Yueh ritual music decorating a *hú* wine-vessel from the Warring States period (480-221 BC), now in the Musée Guimet in Paris. From left to right, the instruments are pan-pipes, bell-chimes, mouth-organ, stone chimes, mounted barrel-drum and standing clapper-drum.

The $sh\bar{e}ng$ ($\underline{\underline{x}}$), has seventeen pipes of varying lengths forming an incomplete circle around a wind-chest of either carved wood or metal. This arrangement gradually became more or less standardized, with $y\dot{u}$ denoting a melody and $sh\bar{e}ng$ a harmony instrument. Older instruments often had much longer mouthpieces than those used on modern ones – perhaps so the emperor could see the faces of the female court musicians who serenaded him. Figure 11 shows a female $sh\bar{e}ng$ player represented on the tomb of Wang Jian (AD 847-918) in the Yongling Museum, Chengdu. By the Tang period, representations of the $sh\bar{e}ng$ became relatively common (Figure 12). The repertoire of the Tang court is gradually being published (Picken 1981-1990) and melodic instruments such as the lute and mouth-organ feature in the scores.

Of the seventeen pipes of the typical *shēng*, three or four were blocked and had no reeds. By the mid-twentieth century these silent pipes were often given reeds to add chromatic notes. Such a procedure was common for many instruments in China during the twentieth century, as composers required indigenous instruments to be played alongside Western instruments in orchestras. Larger instruments with more pipes started to be produced and resonators added to give more volume. New variations on the traditional *shēng* were invented in the late twentieth century, such as the keyed *shēng* or *jiājiànshēng* (加键笙). As its name







Figure 12. Tang era statuette of female musician with shēng. Photo: R. Blench; courtesy Historical Museum, Forbidden City.



Figure 13. Bugan mouth-organ. Photo: courtesy Andrew Hsiu.

suggests, instead of the notes being selected by the player's fingers, there is a system of keys or buttons which open and close the ends of the pipes. The most recent versions of this instrument have thirty-seven pipes, covering three fully chromatic octaves. Larger ensembles sometimes use the *dàpáishēng* (大排笙, 'large row *shēng*'), a large floor-standing organ-like instrument and the somewhat smaller *bàoshēng* (抱笙, 'held *shēng*'), supported by a stand or held in the player's lap.

The *lúshēng* (TC 蘆笙) or *lúshā* (蘆沙) is a mouth organ played by southern minorities in China and neighboring countries, such as the Dong, Gelao, Lahu, Hmong and Shui. It usually has six pipes in two rows of three, ranging in size from the small types shown to instruments with pipes up to four meters in length. Figure 13 shows a mouth-organ of the Bugan, an isolated Austroasiatic minority in south China.

Although the pipes protrude through the bottom of the wind-chest in a manner similar to the those of the *húlúshēng*, the pipes are closed near the lower end. Often the upper ends of the pipes have additional resonators added to them, and in some cases a pipe might be fitted with multiple reeds to emphasize a particular note. These have two rows of pipes side-by-side along the instrument, in line with the mouthpiece of the instrument. Examples include the *sumpoton* of northeastern Borneo, the Thai/ Laotian *khaen* and the *lúshēng* played by Chinese minority groups (the latter two having wind-chests of carved wood, contrasting with the gourd wind-chest of the former).

Korea and Japan

The *shēng* was introduced into Korea from China during the Three Kingdoms period (57 BC-AD 668), where it became known as the *saenghwang* (hangul: 생황; hanja: 笙簧). Typically, the *saenghwang* has seventeen pipes, with one of them being silent. Figure 14 shows an instrument depicted in the album *Hyewon pungsokdo* (1805). Two other early Chinese mouth-organs are known from Korean records, the u (hangul: $\stackrel{\circ}{\rightarrow}$; hanja: $\stackrel{\circ}{\cong}$) from the Chinese yu, and the *hwa* (hangul: $\stackrel{\circ}{\Rightarrow}$; hanja: $\frac{\pi}{10}$), a mouth-organ with thirteen pipes from the Chinese *he*. Both are no longer in use.



Figure 14. Korean saenghwang (Hyewon pungsokdo 1805: Cheongru soil; open access image from Wikipedia).



Figure 15. Shō player, Tang style (Shinzei Kogakuzu in Wikipedia).

In the eight century AD, the Chinese presented a gift of three *shēng* and three *yú* to the Japanese court at Nara. The *yú* fell almost immediately into disuse, although some of these instruments, *u* in Japanese, are still preserved in the Shoso-In Imperial Treasure House in Nara. The *shēng* was transformed into the Japanese *shō* (笙), which is slimmer and higher pitched than the typical *shēng*. Figure 15 shows a painting of a performer playing in Tang style from the Shinzei Kogakuzu (Masamune 1927). The *shō* has seventeen pipes of which two are traditionally silent. The *shō* plays in *Gagaku*, literally 'elegant music', the music of the Japanese court. Gagaku most commonly features the *shō*, *hichiriki* (a doublereed instrument), *fue* (a bamboo flute), *koto* and percussion. The *shō* plays long sustained tone clusters, which slowly evolve as the piece progresses. Remarkably, there are decipherable scores in Japan that date from the eight century AD which give an idea of the musical output of the *shō* (Harich-Schneider 1973: 77).

Iran

By the sixth century AD, the mouth organ had spread from China to Persia, where it was known as *mushtaqsini, bisha-imushta* and later as *chubchiq*. The instrument is depicted in several illustrations from that period but seems not to have entered the mainstream of Persian music. A mouth-organ is depicted on a Persian vase from the tenth or eleventh century together with a shawm (Karomatov *et al.* 1987: 152).

Việt Nam

Việt Nam is one country apart from China where there is significant early iconography of the mouthorgan. Figure 16 shows an image of a mouth-organ player on a libation cup, on the Việt Khe coffin (*c*. AD 200) now in the Vietnamese Historical Museum in Hanoi. The instrument represented is almost certainly



Figure 16. Gourd mouth organ on a libation cup, Việt Khe coffin. Photo: R. Blench, courtesy Vietnamese Historical Museum.

a gourd-resonated mouth organ with a long tubular mouthpiece and a small number of pipes, resembling closely those still found in the region today. Slightly more difficult to interpret are depictions of mouth organs on bronze drums. Bronze drums are spectacular prestige objects, probably not originally intended as musical instruments, which were first cast in Việt Nam *c*. 400 BC and were widely traded and sometimes imitated in workshops throughout the region (Calo 2009). They are decorated with complex imagery which is often difficult to interpret, but figures with elaborate feather head-dresses are common, as are boats. Figure 17 shows what is almost certainly a mouth-organ player on the Ngọc Lũ bronze drum (found in 1893 in the Red River Delta, dated to the second-third century BC, following the captions in the National Historical Museum, Hanoi). In this case, the pipes clearly transpierce the wind-chest, resembling more Types

III and IV than the minority instruments in Việt Nam, but the representation is too schematic to say much more.

Việt Nam is also home to gourd-resonated mouth-organs more typical of the Southeast Asian region. Figure 18 shows a gourd-resonated mouth-organ, attributed to the Xa Pho people, with six pipes, a gourd wind-chest and resonator (on the Vietnamese Institute of Musicology Website this instrument



Figure 17. Mouth-organ player, Ngọc Lũ bronze drum, courtesy Ambra Calo.

is named as the *mbuot*, and said to be Hmong, but I have examined the actual instrument and the notes accompanying it; <http://vienamnhac.org/databank.html>, accessed 10 Jan. 2020). Figure 19 shows an instrument remarkably similar to those excavated in Yunnan, with bronze copies of gourd wind-chests, played in modern-day Vietnam. The pipes are arranged in two rows, four plus two, and emerge from the base of the wind-chest, allowing bending of the notes. A very similar instrument, known as *kupuot*, is played by the Roglai people; strikingly, however, the posture is quite different. The Roglai hold the instrument at right angles to the body, so that the pipes project laterally rather than forward (Figure 20).



Figure 18. Gourd-resonated mouth-organ, Xa Pho people. Photo: R. Blench, courtesy Vietnamese Institute of Ethnomusicology.

Laos, Cambodia and Thailand

Laos is one of the ethnically most complex countries in Southeast Asia, with some 127 languages spoken (Eberhard et al. 2019). Many of these minorities are little-studied, and their musical instruments almost unknown. A lack of a national museum in Laos with ethnographic holdings has made it difficult to get an overview of the situation. Moreover, research is not encouraged in some rural areas. Nonetheless, the khaen or khene mouth-organ (Lao: ແຄນ ; Thai: แคน) can be considered the national instrument of Laos, and features on heritage sites, on YouTube videos and numerous CDs. The photo (Figure 21) shows a typical arrangement of pipes, with two rows of seven passing through a near-conical wind-chest. The reeds are usually bronze or even silver today. Lao modes are typically pentatonic. Miller (1980, 1985, 1991) produced useful guides to both practical performance on the instrument and a study of its performance in Lao society. It is the most important instrument of Laos and northeast Thailand, as it is the most refined in tuning, playing techniques and repertoire. Four sizes are common today: with six, fourteen, sixteen and eighteen pipes. The most common khaen is the sixteen-pipe version, the khaen paat, from two to three and a half feet in length. The sixteen-pipe khaen plays a two-octave diatonic minor scale and is tuned in half and whole steps similar to Western tuning. The pitch, however, is not standardized



Figure 19. Modern-day double-row mouth organ in Vietnam, illustrating playing technique; courtesy Vietnamese Institute of Ethnomusicology.



Figure 20. Roglai kupuot mouth organ, courtesy Vietnamese Institute of Ethnomusicology.

and varies considerably between instruments. The eighteen-pipe version, the *khaengao*, which reaches over six feet, has virtually disappeared. Playing such an instrument was extremely taxing because of the wind pressure players had to maintain. Prince Henri d'Orleans (1894: 371) wrote: "A man carrying a Laotian organ, which he has difficulty in setting up, follows them [the singers]. The pipes of the organ are so long – nearly fourteen feet – that he is finally obliged to cut a hole in the roof, but the damage can be easily repaired." This instrument, known as *ken pe* or *pi pe*, is also played by the Tai in Việt Nam, where it has thirteen sounding pipes and a single dummy pipe. Figure 22 is one of the few examples of an iconographic representation in Laos. It shows a mouth-organ together with flute and reed-pipe in a glass mosaic at Wat Xieng Thouong, Luang Prabang, which is dated to *c*. 1830, according to the explanatory captions.

In Cambodia, the mouth-organ is used among the ethnic Lao in Stung Treng province and in *lakhon ken*, a Cambodian dance drama genre that features the *khene* as the main instrument. Mouth-organs are probably not traditional in Cambodia and none are represented on its most famous iconographic record of musical instruments, the friezes at Angkor Wat (Blench 2008).

Thailand has a wide variety of mouth-organs reflecting its ethnolinguistic diversity. The Lao *khaen* is also played in Thailand (Figure 23), but the gourd organs typical of minorities of Yunnan are found, as well as the Hmong mouth-organs. The *naw* is played by a number of minority peoples of the region,





Figure 23. Khaengao mouth organs, Thailand. Photo: R. Blench, courtesy National Museum of Thailand.

Figure 22. Musical instruments; glass mosaic, Wat Xieng Thouong, Luang Prabang. Photo: R. Blench.

including the Yi, Lahu and Lisu peoples (Vorreiter 2009). It has five pipes grouped in a circular cluster, whose open ends appear flush with the bottom of the gourd wind chamber, which allows the player to 'bend' the notes by slowly covering the ends of the pipes with the right thumb while playing. The technique is difficult, and the resulting music is very lively and quite loud. Traditionally this instrument also played a coded language, used for unmarried people to converse with.

Myanmar

The mouth-organ does not play a significant role in the Burmese instrumentarium today, although it is played by some minorities in the north. However, there is evidence that it was of greater importance in

the past. One of the more intriguing pieces of textual evidence for the mouth organ occurs in the Tang chronicles. In AD 802 the ruler of the Pyu kingdom sent a troupe of thirty-five musicians to the Tang capital at Yang Chao (Becker 1967). The music was so noteworthy that the chronicler included a complete list of instruments, among which were two mouth-organs of different sizes with gourd wind-chests. Each had sixteen pipes and the longest was nearly five feet in length. The number of pipes is surprisingly large, but the size of the instrument and the detail of the gourd suggest some of the folk instruments such as the Lahu type (see Figure 6 above), rather than the two orderly rows of the *khaen* type instruments (Figure 24).

Bangla Desh and northeast India

Bangla Desh is dominated by Indo-Aryan speakers for whom the mouth-organ is extremely alien. However, along the border with Myanmar live Sino-Tibetan minorities, who play mouth-organs in very large ensembles. The CD *Ritual Mouth Organs of the Murung* documents a large ensemble of performers on

large instruments, *plung*, with gourd wind-chests.

India is at the very edge of the distribution of the mouth-organ and represents a spillover from Southeast Asian types. Figures 25 and 26 show a mouth-organ played by the Kuki in Nagaland, which is clearly a Type I instrument.

Borneo

Mouth-organs and the free-reed in general are not typical of Island Southeast Asia. They were clearly not part of the Austronesian instrumentarium, and are only found on one island, Borneo, and only



Figure 25. Kuki mouth-organ performer; courtesy Don Bosco Museum.



Figure 24. Mouth-organ players at Bagan; courtesy Alexandra Green.



Figure 26 Kuki mouth-organ. Photo: R. Blench, courtesy Guwahati Museum.



Figure 27. Orang Ulu mouth organ, Borneo. Photo: R. Blench, courtesy Sarawak Museum.



Figure 28. Bidayuh mouth-organ, Sarawak. Photo: R. Blench, courtesy Sarawak Cultural Village, Kuching.

in a restricted region in the northwest. The *keluri*, *keledi* and the *enkulurai* are free-reed mouth-organs. Blench (2011) has argued that this enclave almost certainly reflects a prior settlement of Austroasiatic speakers in this region, now submerged by later Austronesian migrations.

Typical instruments have six pipes which do not pierce the bottom of the gourd. The *keluri* or *keledi* is played by the Orang Ulu or 'upriver people' of the interior of Borneo (Figure 27), and the *enkulurai* is played by the Iban and related peoples who

live in the lowlands close to the coast (Figure 28). Both of these instruments are made with a made a gourd wind chamber with six bamboo pipes and a bamboo or occasionally metal free-reed. The longest pipe on the Iban instruments is twice the length of the Orang Ulu *keluri*. Some Iban instruments may reach over two meters in length, although an average instrument is around 80 centimeters. *Keluri* were traditionally played for 'long dances' associated with the rituals around headhunting, but with the disappearance of this practice, these instruments are now seldom played or made. There are still a few elder players able to perform, but their music will likely disappear soon (information from posted data sheets in the Sarawak Museum, visited 2014).

Hmong mouth-organ

The Type IV mouth-organ is characteristic of the Hmong (Miao) peoples who live dispersed across a large region of Yunnan, spreading to Việt Nam eastward and into northern Laos and Thailand. The characteristics of Type IV include an extended tubular mouthpiece which narrows into a slim wooden wind-chest. The pipes, which can be as few as three, but are more typically six or seven, transpierce the wind-chest, but the performers do not 'bend' the notes with their thumbs. Vorreiter (2009) depicts typical performers in northern Thailand, while Figure 29 shows a close-up of the wind-chest in a typical Hmong mouth-organ in Việt Nam. Hmong everywhere essentially use the mouth-organ while dancing; however, the music itself is crucial in communicating with the spirits, for example at funerals.



Figure 29 Close-up of wind-chest in a typical Hmong mouth-organ. Photo: R. Blench, courtesy Vietnamese Institute of Ethnomusicology.

Soul music: the mouth-organ and communication with the spirits

The well-known use of the *shēng* in East Asian court music is in fact highly atypical of its role in Southeast Asian society. The

free-reed sounds on inhalation, allowing the player to establish a continuous rhythm reinforced with chords, which is highly suitable for accompanying dancing in the same manner as the bagpipe in medieval Europe. It was just this capacity that ensured the harmonica was rapidly adopted by blues players and the accordion by European village musicians. Among the Hmong, dancing with the mouth-organ is highly characteristic and players can also map a highly complex series of dance steps to the rhythms of the *qen*. Schwörer (1982) discusses the uses of the mouth-organ among the Lahu in northern Thailand, where it is an indispensable accompaniment to the ritual cycle. Most importantly, the Lahu and related peoples use the tones produced by mouth-organs to mimic the speech-tones of the language, and in this way recite the lengthy epics which reinforce their identity.

Evolution of the mouth-organ: transitional instruments

One of the puzzles about the mouth-organ is the way it appears to be fully developed from its inception; transitional or children's instruments do not seem to account for its evolution. The initial question is the source of the free-reed and to which instrument it was first applied. A possible source is the idioglot

clarinet, found throughout this region. Figure 30 illustrates the ephemeral clarinets, mae lii mae lo, made by Akha women in northern Thailand. It is easy to imagine that an accident with cutting or a casual experiment might lead to the discovery of the freereed principle. If so, the earliest instruments would have been free-reed pipes similar to the clarinets. The Hmong traa nplai is one such instrument (Figure 31), although today it has a reedcap made of a glass jar. In some cases, such as the Palaung waou, an additional drone-pipe without



Figure 30. Akha idioglot clarinets, mae lii mae lo, courtesy John Moore.



Figure 31. Hmong traa nplai. Photo: R. Blench.



Figure 32. Lja, a free-reed pipe with wind-chest and fingerholes. Photo: R. Blench.

a fingerhole is parallel to the main sounding tube. Expanding the number of these may well have led to the evolution of the mouth-organ.

The other important innovation is the wind-chest. These are not very common globally; for example, they do not occur in Africa, Oceania or the New World. In western Eurasia, they are usually replaced by the flexible bag of the bagpipe, although the reedcap on shawms such as the krummhorn and others constitute a type of fixed wind-chest. The *pungi*, or so-called 'snake-charmers' pipes found in parts of India, has a gourd wind-cap which encloses two clarinet reed-pipes, one a drone and the other with fingerholes. It seems most likely that the wind-chest, originally a gourd, was developed in the Yunnan region, first to prevent damage to the reed, and then to hold multiple pipes in place.

In seeking the origin of the free reed mouth organ, it is valuable to look at other instruments which may be transitional in its evolution. The most important of these are the single or multiple fingerhole pipes with gourd wind-chests still played in the region. One such instrument, played in south China, is the *ija* (Figure 32). The gourd wind-chest is in place but is only transpierced by a single pipe with two fingerholes, resembling more the transverse fingerhole free-reed pipes played by the Hmong.

A possible historical schema

The distributional evidence suggests that we should look to the reed-pipes of Laos and Vietnam as the original sources of the free-reed mouth-organ. Somewhere between Laos, Vietnam and Yunnan is the most likely home of the earliest instruments, which would have had gourd wind-chests and a small number of pipes. This may well have been prior to the dispersal of Austroasiatic languages, since the language phylum and the gourd-organ largely overlap. If so, then this may have been before 4000 bp, when Austroasiatic began to disperse (Sidwell and Blench 2011). If it is correct that Austroasiatic

speakers reached Borneo prior to the Austronesians, then this again gives a date of prior to 3500 BP (Blench 2011a).

The Dian kingdoms of Yunnan took up the mouth-organ and began to make copies of the windchambers in metal, presumably by the third century BC (Allard 1999). When the Chinese first came into contact with the Dian, they initially copied the gourd-resonated instruments in more costly materials (Guangsheng 2000). By the Tang period the instrument had been re-arranged to resemble the *shēng*. This type of mouth-organ was exported to Japan and Korea by the eighth century AD and has remained largely unchanged in ritual orchestras. There is no real evidence for the evolution of the Lao/ Thai *khaen* instruments, but these are probably a restructured version of the *fang sheng*, and could be relatively late, perhaps sixteenth century, to judge by the representation at Bagan. Similarly, there is no iconography for the Hmong *qen*. However, nearly identical instruments occur wherever the Hmong are found, pointing to its dispersal with the ethnic group itself, which can probably be placed to at least 2500 BP. The Hmong almost certainly migrated from central China southwards towards Laos. Even so, its idiosyncratic design has no obvious progenitor.

Acknowledgments

A first version of this paper was presented at the EurASEAA 14 meeting in Dublin in 2012, in the session 'Living Traditions'. I would like to thank the audience for helpful comments for this revision. The background research has been compiled over a number of years and I am grateful to the numerous museums which have permitted me to photograph relevant objects in their collections. Thanks also to John Moore and Victoria Vorreiter in Chiang Mai for both discussions and photographs of some rarer instruments. Andrew Hsiu kindly sent me images of the Bugan mouth-organ and permission to reproduce them. Pu Shi kindly checked my Chinese transcriptions. Thanks to Ambra Calo for drawing my attention to the Việt Khe coffin. I am grateful to an anonymous referee for comments.

Discography

Ritual Mouth Organs of the Murung. Inedit W260084.

The ethnoarchaeology of Southeast Asian foragers: resiliency in Ata indigenous knowledge and cultural expression in the pre-Hispanic and Hispanic Philippines

Larissa Smith

The research reported here focuses on the Ata foragers of Negros Island in the central Philippines. Despite being subjected to long-term changes in ecological and social landscapes, the Ata have maintained a high level of flexibility in their economic and social strategies. Ethnographic interviews and participant observation among the Ata, along with ethnoarchaeological work at a number of Ata sites, have revealed how they have managed to incorporate external influences, mingling traditional knowledge and new knowledge in deeply-held cultural expressions, while retaining significant agency in these external interactions. This paper explores how the Ata have melded external beliefs and practices with their own, undergoing both cultural resiliency and cultural change over time that is most archaeologically visible in settlement organization, subsistence technologies and social identity markers, and less materially seen in governance, language and the arts. This specific case illustrates that foragers in Southeast Asia do not need to be marginal 'people without history' when researchers integrate ethnographic, archaeological and social and historical analysis.

Introduction

The field of anthropology, and more specifically the subfield of archaeology, strives to understand the human past, often through tangible material remains buried for years, decades, or millennia. As scholars, we realize that understanding the human past often involves looking into the present, adopting analogous examples of human settlement systems and, especially, living traditions. These living traditions allow a new lens through which to look at human cultures and gain access to what may be archaeologically invisible, intangible aspects of human culture change (David and Kramer 2001; Gamble and Boismier 1991). This is a particularly significant tool for reconstructing culturally-meaningful 'indigenous histories' in tribal agricultural and foraging societies that were not traditionally literate, and whose histories are often documented by external societies with biased representations (Morrison and Junker 2002).

Even more so, the application of an ethnoarchaeological approach in uncovering and substantiating these 'indigenous histories' emerges as a means to better understand cultural resiliency of traditional peoples diachronically. Within this paper, ethnoarchaeology is understood as '...both doing and using. Doing ethnoarchaeology is meant to denote explicit archaeological ethnography studies where data for use in analogy are gathered. Using indicates the situation where ethnographic data obtained from written sources, museums, or AE studies are used to create hypotheses or models or are compared with archaeological data for use in analogy' (Stiles 1977: 97). This study draws from regional-scale archaeology, historic sources, geographic information systems, ethnology and participant observation ethnographic fieldwork to do this.

Ethnoarchaeological studies of traditional foraging in Southeast Asia, as elsewhere in the world, have tended to focus on the technical steps (or *chaîne opératoire*) of restricted forms of technology, such as lithic tools and pottery, and how these technological features are learned and transmitted in social groups of craftmakers (e.g. McCall 2012; Roux 2007). Less often, archaeologists have carried out ethnoarchaeological analysis of abandoned habitation sites in foraging societies, and even fewer regional-scale settlement pattern studies, combined with ethnographic fieldwork in modern communities connected historically with, or comparable in organization to, societies of the past (Binford 1978; Gould 1978; Kent 1984; Sellet

et al. 2006). One pertinent work looks at ethnoarchaeology among the Agta of Luzon (Griffin and Estioko-Griffin 1978). The lens of this paper looks at the larger issue of how archaeologically-known groups, such as the Ata of the central Philippines, might have persisted over several millennia through what anthropologists refer to as 'cultural resiliency' (Fortier 2014). The study of resilience by anthropologists and archaeologists focuses on the process of selectively transforming, adapting and, in some cases, resistantly retaining cultural practices, beliefs and traditional foci of knowledge over time, in the context of changes in ecological conditions and shifting economic, social and ideological pressures within larger social domains. This has involved interaction with emerging farming communities and the multiethnic complexity of expanding pre-modern states, engaging in the global economy and socio-politics of a modern nation (Redman 2005; Woollett 2007). Archaeological and ethnographic studies of resilience in foraging societies have focused on ecological and social pressures seen in environmental changes (e.g. forest clearance, depletion of resources, climate change), the adoption of modified subsistence practices (e.g. emerging 'commercialized' foraging, engagement in swidden farming or arboriculture, changing seasonality of resource use, evidence for changes in sedentism and settlement placement), economic adjustments to external trade (i.e. increased evidence for inter-ethnic contacts, the appearance of new products and trade routes, evidence for greater conflict along territorial boundaries), and adoption of 'foreign' social and religious practices (e.g. evidence for changes in settlement organization or household composition, the appearance of new social symbols or religious paraphernalia) (Forbes et al. 2009; Robards and Alessa 2004).

This type of detailed study of long-term processes of resilience in foraging populations is most successful in case studies where there is a good base of ecological data, a strongly-developed regional archaeological research program, multi-vocal historical documents, and a distinct contemporary population that is historically connected to the pre-modern foraging group. The more than 100,000 contemporary Agta, Ata or Aeta foragers of the Philippines, likely the descendants of aboriginal populations in the archipelago from the Pleistocene, who have been the subject of historic and ethnographic accounts from at least the thirteenth century AD (Zaide 1990), and who were only recently settled on reserved government lands (Mascuñana 1997) are the focus of this study of cultural resilience. This paper emphasizes recent ethnographic and ethnoarchaeological research among the present-day Ata on Negros Island, in the vicinity of the Tanjay Region, where a long-term, regional-scale archaeological project has been carried out to examine changing patterns of social and economic interactions between foragers, upland tribal farming societies and expanding coastal maritime trading chiefdoms over more than a thousand years (Junker and Smith 2017).

Ata foragers: historical and ecological background

The foragers who occupy various regions of Island Southeast Asia today include a number of groups who appear on genetic and archaeological grounds to be at least partially the descendants of Pleistocene colonizers (e.g. the Agta/Ata of the Philippines, the Semang of the Malay Peninsula) (Hutterer 1976); other groups have even been claimed to be 'devolved' agriculturalists who became commercialized forest exploiters (Junker 2002a). Whatever variation in their long-term histories, it is clear that in many areas of Southeast Asia, including the Philippine Islands, foragers have interacted with agricultural groups for many millennia (Bellwood 1992). Some early models of the peopling of the Philippines and other regions of Island Southeast Asia view the Ata and other groups as simply being progressively pushed into higher elevation forested zones by expanding Neolithic lowland farmers. However, ethnographic studies of Agta/Ata (also known popularly as 'Negritos') in the northern Luzon, Mount Pinatubo and southern and northern Negros regions of the Philippines, clearly indicate that Ata people used a wide variety of ecological zones, engaging in hunting and gathering and even occasional swidden farming in the uplands, but also river fishing, hunting, trading, and plant procurement at many elevation zones, coastal shellfish collecting and even maritime inter-island trade (Rahmann and Maceda 1955; T. Oracion

1960, 1963, 1965, 1967; Rahmann 1963; Cadeliña 1973, 1974; Estioko-Griffin and Griffin 1981; E. Oracion 1983a, 1983b, 1984; Griffin 1984; Griffin and Estioko-Griffin 1985; Mascuñana 1997: 30-35; Rai 1990; Headland and Reid 1989, 1991; Seitz 2004).

Ecological specialization and symbiotic trade linking foragers and farmers in the environmentallydiverse island ecosystems of the Philippines have a long history (Hutterer 1976), with foragers providing upland forest resources, including foodstuffs and raw materials, in exchange for lowland agricultural products and manufactured goods like ceramics and metal implements. The expansion of lowland chiefdoms involved in intensive maritime trade for 'prestige goods' like silk and porcelain appears to have intensified this coastal-interior trade, since the procurement of these exotics was dependent on access to the interior forest products (e.g. spices, hardwoods, resins, animal parts, etc.) desired by Chinese merchants and traders from other mainland Asia polities since the tenth century AD (Junker 2002b).

These interactions between tribal swidden farmers, lowland craftspeople and maritime traders were not static, but likely involved an emphasis on situationally-shifting strategies of resource use, economic repertoires, and social networking. Historical records for the past 500 years, while colored by Chinese trade interests and later European colonial efforts in the lowlands, do occasionally mention Philippine foragers, who are presented as sophisticated in weighing economic advantages in trade relations, and clearly did not lack agency in regional exchanges (Zaide 1990: 7, 114; Junker 2002b; see also Rahmann and Maceda 1955, 1973; Rahmann 1975). Philippine foragers appear to have adjusted their engagement in external trade over time, weighing the physical danger of conflict and the probability of capture in slave-raiding against the advantages of access to lowland products (Junker 2002b). Lowland trading partners offered exotic goods such as foreign porcelain, textiles, and glass beads, in addition to local goods such as earthenware and metal, to entice and even court interior foragers and swidden farmers with access to coveted forest resources, in order to develop continuing trade partnerships. The Ata and other interior foragers often formed alliances with a number of coastal trading partners, who may have been in strong competition with each other to gain valuable access to the upland products absolutely essential to foreign trade (*ibid.*).

Archaeological research in the Tanjay region

Archaeological evidence from a regional-scale project carried out in the Tanjay region of Negros Island over more than three decades (Hutterer and Macdonald 1982; Junker 1999), has largely focused on Metal Age and later populations, documenting more than 1500 years of interaction between an expanding lowland chiefdom and adjacent foragers and tribal swiddeners. Through this research, archaeological signatures were established for three economically, and presumably culturally, distinct groups, known historically to have occupied the region: (1) substantial settlements with increasingly complex settlement hierarchies, representing lowland farming and maritime-oriented societies, which appear to have developed into a substantial maritime trading chiefdom by at least the eleventh century A.D., and described in 1565 in collected manuscripts (Zaide 1990) as the 'Tanay' polity; (2) scattered upland semi-permanent hamlets of swidden farmers, likely ancestral to the 'Bukidnon' or 'Magahat' groups described in nineteenth-century ethnographic accounts, and still living in the area today; and (3) smallscale impermanent camps in both the uplands and lowland margins that have features indicative of Ata-like hunter-gatherers (Junker 2002b). The demarcation of these social identity markers has been the basis for the study of settlement organization and subsistence technologies over time, and thus for distinguishing forager camps temporally and diachronically.

Archaeologically, the latter forager sites were characteristically small, occasionally yielding ash concentrations or postholes indicative of at least brief occupation, had few or no lowland manufactured

goods, and had artifact assemblages dominated by lithic artifacts and substantial densities of undomesticated faunal remains and shell (Parry 1982a, 1982b; Junker 1996). This archaeological patterning persisted well into the mid-1900s. Archaeological evidence demonstrates a shift in the location of these camps from the coastal areas into the interior over time, presumably in response to the expansion of the lowland maritime trading polity and consequent economic and social changes (Junker 2002c).

The period for which we have the best-documented settlement system of roughly contemporaneous sites likely reflecting foraging, upland swidden farming, and lowland agricultural groups is the fifteenth-sixteenth centuries AD Osmena Phase in the Tanjay Region (Junker 2002c). Some preliminary spatial analyses of settlement patterning in the particularly well-represented phase prior to Spanish colonization, indicates possible seasonal movements of Ata foragers between upland dispersed camps in the rainy season to more concentrated camps in the ecotone zone between the upland and lowland in the dry season. Artifact assemblages at the latter sites indicate the likely trade acquisition of earthenware pottery, metal tools, glass beads, marine shells, and even porcelain (Junker 1990, 1993, 1994, 1996, 1999; Smith and Junker 2014). Marine shells and earthenware pottery have been examined in some detail spatially for the two centuries just before European contact, and both products appear to follow a linear density fall-off pattern indicative of down-the-line exchange, where foraging camps closer to the lowlands have significantly higher quantities of these lowland products than those further away (Junker 1996, 2002c). There are eyewitness Chinese accounts dating to at least the thirteenth century of trade contacts between their primary coastal trade partners and interior peoples matching the physical description of Ata (although probably not on the island of Negros), noting that Chinese porcelain and other exotics were flowing to these groups in addition to lowland products (Junker 2002b). Additionally, artificially-modified porcelain fragments are commonly found at upland Tanjay region sites, likely integrated into necklaces with shells, animal teeth and other ornaments, if we can compare these finds to intact nineteenth-century necklaces currently in the Field Museum of Chicago collections, made of similar objects, and once worn by upland populations (Worcestor Collection, Field Museum). The reworking of porcelains into jewelry, possibly functioning as ritual talismans, illustrates that the foragers reshaped these trade goods to fit their own cultural conventions of meaning and materialization.

Most of the forest products provided by Ata traders and other upland peoples in the archipelago in exchange for manufactured goods are recorded as early as the twelfth century AD in Chinese texts as perishable goods, e.g. spices, resins, honey, beeswax, hardwoods, medicinal plants, and animal pelts, and have variable preservation potential in the archaeological record (Zaide 1990). Zooarchaeological and paleobotanical studies on charred material in hearths at the coastal trade center of Tanjay (Hutterer 1976; Mudar 1997; Gunn 1997) show that animals and medicinal plants indigenous to higher elevations were clearly moved coastward, most likely through river-based trade. These signature forms of archaeological patterning persisted at least into the mid- to later 1900s in the region, with the addition of more recent metal and ceramic materials, consistent with the ethnographic accounts of the early to mid-twentieth century, prior to intensified government-sponsored resettlement by the early 1980s (Rahmann and Maceda 1955, 1973; Rahmann 1975, 1976; T. Oracion 1960, 1963; Maceda 1962; Cadeliña 1973, 1974; Reynolds 1983).

Similar patterns of long-term persistence of foragers in symbiotic economic and social relations with lowland agriculturalists, often part of emerging coastal maritime trading chiefdoms, have been noted by Hutterer in his archaeological work in Samar (central Philippines) and elsewhere (1977; 1983, 1988), and he has generalized these archaeological observations to create a general model of Southeast Asian forager-farmer interactions that emphasizes cultural dynamism and flexibility, as well as conservative values, as aspects of resilience in the face of new social and ecological landscapes. Additional spatial and

artifactual analysis of the Tanjay archaeological data on forager sites collected in the 1980s and 1990s, and on more recent additional material collected by the author in 2010-2011, are in progress and will be reported on in future. The rest of this paper will focus on recent ethnographic work on Negros Island at the Mabini Ata Reservation and nearby locales, and its relevance to this issue of resiliency in cultural practice and identity among Southeast Asian foragers like the Ata.

Ethnographic insights into resiliency of Agta identity, economic strategies and social organization

In order to explore issues of continuity and change, I conducted ethnographic fieldwork for a period of approximately four months, using methods of participant observation. I lived among and visited groups of Ata located in Barangays Canggohob, Cansuling and Tubo of Mabinay, largely within the government reserve area on Negros Island, and in Bais City of Negros Oriental (Figure 1). The Ata are heavily concentrated in the city of Mabinay, in reservations created by the Philippine government in an attempt to meet its goal of successfully acculturating the Ata into the modern nation, and opening up what government administrators see as desirable access to land for farming, permanent housing, government schools, and modern medical care (T. Oracion 1963, 1965, 1967; Reynolds 1983; Cadeliña 1983a and b, 1985, 1988a and b; E. Oracion 1984; Cadeliña and Puracan 1985). Here only a few significant examples of resilience can be mentioned, noted through balanced resistance and selective adaptation as a response to recent stresses, but these examples might provide insights into the general coping strategies of foragers in the past.





Figure 1. Administrative map of the Provinces of Oriental Negros; of particular importance: Mabinay, Bais and Tanjay. Photos: L. Smith.

Ethnographies of the Negros Island Ata in the mid-twentieth century, while emphasizing some seasonal engagement in farming their own small swidden plots or performing labor for adjacent Bukidnon or lowland Visavan farmers, with whom they had exchange partnerships, also documented a clear round of preferred seasonal economic activities (T. Oracion 1963; Cadeliña 1973; Rahmann 1975). The Ata moved their camps at least six to eight times per year within territories defined largely by small bands of cognatically- and affinally-related kinsmen, or those brought in through fictive kin ties. In the rainy season, when swollen rivers made travel difficult, they concentrated on hunting, river fishing, and collecting of some forest resources, while the dry season allowed movements into lower elevations to trade with lowlanders, to plant and later harvest small swidden plots, and to perform seasonal farming tasks for agriculturalists (Reynolds 1974). Land and resources within the traditional economic orbit of specific bands were viewed as corporately controlled and recognized as available for all members of the group to exploit during their annual seasonal rounds of activities and multiple camp moves. Leadership positions in Ata bands, and perhaps at a larger regional level, appear to have been traditionally based on personal qualities such as charisma, political savvy, economic skills and social connections, with genealogical ties to previous leaders being an advantage, as is typical of small-scale foraging societies throughout Southeast Asia.

Relatively rapid government resettlement in the 1980s replaced the temporary camps of lean-tos observed by anthropologists like Griffin (1984) and Rai (1990) in the northern Luzon Agta, with elevated homes requiring increased sedentism as well as constant maintenance. Land grants in the vicinity of Mabini also seemingly forced the traditional foragers into year-round subsistence farming. However, what appeared at first glance to be a complete eradication of mobility and foraging activities for the sake of modernity, masked a more complex process of economic and social adaptation. It became clearer over time that the Ata, who had historically weathered the early incursions of coastal colonizing agriculturalists, the predations of slave-raiding lowland chiefdoms, foreign traders and colonial invaders, and finally the demands of a globalizing nation-state, had remarkable resiliency in coping with change in a way that both embraced innovation and retained aspects of what it meant to be Ata.

For example, despite government policy aimed at transforming the social fabric and economic structure, the Ata at Mabini still maintain a distinct and rather unique Ata or 'Negrito' identity and social organization (2010 interviews). First, although they were brought into the modern nation's political administration by being subjected to the leadership of a barangay captain (the lowest level of the Philippine government's political hierarchy), I observed that any disputes that occurred between Ata and major community issues were in actuality referred to and adjudicated by the traditional Ata leader of that particular community. These unofficial indigenous leaders had achieved the legitimate status needed to become leaders through kin ties, mostly blood based, that connected them to a large number of people in the group and to ancestral Ata in the region. Their abilities to recount genealogical lineages tying them to earlier mobile bands of Negritos inhabiting the area, as well as their direct genealogical link to a previous leader, were the absolutely strongest proof of their suitability for leadership. New Ata leaders also had to be recognized and appointed by the outgoing leader. These methods often stifled division between siblings and bands, for these appointments were often critiqued. One informant, Irenio (2010 interview), believed that this common organizational system for egalitarian societies had been the primary means of governance for hundreds of years and, although he claimed that at least a century ago there were a multitude of Ata Negrito leaders throughout Negros Oriental, the number of traditionally legitimized leaders had undoubtedly decreased due to a number of social, cultural, political and economic factors largely associated with modernity as a major driving force. Irenio observed that changing demographics and the emergence of new social identities have affected this traditional leadership structure.

During the colonial periods, and accelerating even more recently, large numbers of Ata either migrated toward the coastal lowland areas, mixing with lowland Cebuano Visayan speakers, or they emigrated to Manila and other distant cities for work (2010 interviews). Additionally, Irenio noted that Ata identity has developed pejorative connotations for many indigenous people of this group (ibid.). Irenio and other informants noted that Negritos of lighter complexions, or who exhibit less distinct Ata features, often chose to disassociate themselves from the Ata altogether, a practice of cultural denial that is also common among those who have not inter-married outside the group and still retain phenotypic features of Ata identity. This disappointed Irenio, who exhibited great pride in the lengthy occupation of the lands in the region by his people, but at the same time he was forced to confront the effects of the economic and social gains that could be attained from migration to the coast and other islands. He also commiserated with the attempts of some Ata to change their social identity to escape what is likely a 1000-year old negative stigmatization associated with being foragers, darkskinned and/or simply Ata (2010 interview). This was expressed even in a twelfth century AD account of a Chinese trader in the archipelago who, apparently affected by the prejudices of accompanying lowland Visayans on a trading trip into the interior, described a caricature of a savage and physically grotesque forager, who leaped with childish joy at the prospect of receiving a porcelain object (Zaide 1990; Junker 2002b). Situational shifting of identity is a significant social mechanism in any multiethnic society with relationships of dominance and power hierarchies that smaller-scale groups must often navigate to survive (Ellen 2001). The ambivalence of this identification with the dominant society's symbols of belonging and status balanced against genealogical connection to an original social identity is exemplified in prehistory by the Ata foragers in the fifteenth century AD Tanjay region who, perhaps with the 'childishly' perceived joy of the caricatured Ata of the twelfth century account above, happily received Chinese porcelain from the lowland Visayan elites of the Tanjay chiefdom. But instead of hoarding it as a symbol of status in terms of lowland cultural meanings, they broke it into ornament-sized pieces that could be worn by a large number of male warriors as talisman symbols of their communal social identity (Junker 2002b).

Negrito populations that chose to remain under this type of traditional social organization acknowledged these Negrito leaders as ranked individuals whose decisions were well-suited for the group (2010 interviews). Furthermore, justifications for their particular leaders were inherently based on either their leader's genetic ties to previous Negrito leaders, or the natural prowess of the leader at desirable and, often, advantageous, socio-cultural or economic means. The only conflict with this form of leadership observed and whispered about among the people of Mabinay involved mestizo Ata leaders versus full-blooded Ata leaders, the latter residing deep in the interior, where there were suspected to be a great deal more of what were considered genuine Ata behavioral and phenotypical characteristics of foragers (*ibid.*). This conflictive community view, however, remained virtually undetectable to visitors, and was almost immediately quieted by the previous Negrito leader of Canggohob (Ignacio), the current Negrito leader in Bais City (Irenio), as well as any elders of the area. Today, as in the past, the scope of an Ata leader's decision-making in governing the group includes not only the management of social, political and economic matters, but also religious or spiritual matters. During the study, it appeared that this traditional type of organization and these practices are inherently 'Ata' to the core and provide strong evidence of Ata resiliency in the face of government directives.

Turning to the issue of economic strategies and land tenure, adaptability to the new economic realities of sedentism was also noted, balanced with resistance to abandoning traditional uses of landscapes and resources. Although farming is now officially considered to be the main source of income and is economically in line with a lowlander-forged identity as a 'farmer', in actuality the community relies heavily on a subsistence strategy of gathering medicinal remedies, local fruits,

root crops and various other plants that identifies them as Ata. There is a preference for and an ease with which they obtain these indigenous resources for everyday use, for familial visits, or even for celebrations. It appeared that corn, the main crop introduced into the interior because of its adaptability to the rocky terrain, was either only used for corn grits, a sort of dry porridge, or milled for monetary income to purchase other products like donuts, cleaning aids, medicines, *senelas* (sandals), and clothes. The residents preferred traditional root crops, transplanted closer to their residences for easier access, even over rice. In terms of their conceptual framework of corporately-functioning social units, allocated farmland is tended to by extended family units. The farm land is still considered to be corporate property, rather than simply the property of an individual, with work groups usually including as a baseline elders of an extended family, siblings in the next generation, their affines, and their offspring, who were all observed to tend to the sowing and harvesting of these farmed lands. Often what was reaped was shared between these extended family members and fed all the children of the extended family, typically including cousins from afar who ventured into the area almost weekly, in an almost obligatory fashion.

A focus on traditional plants and crops is reinforced by adherence to traditional Ata (or Cebuano-Ilongo pidgin) linguistic terms to refer to various medicinal remedies, wild plants, and crops. This indigenous knowledge about the efficacy and location of these medicinal plants was well known among the elderly Ata, with some young adults still possessing this knowledge base. In addition, often during the study, words learned while in Mabinay would be unintelligible along the Oriental side of the island, later to be recognized on the Occidental side of the island. Words were even unintelligible to both sides, but automatically understood by the local population, likely representing a local term, e.g. night or *nit-nit*. The same would apply to pronunciations of words, e.g. *senelas* vs. *chenelas*. The local population was cognisant of all these differences, strongly suggesting that linguistic code-switching and multi-lingual vocabulary formation is clearly an important strategy for both reinforcing Ata identity and emphasizing their ability to navigate various parts of the non-Ata world.

These observations suggest that, despite having had their physical territories stripped from them via deforestation by immigrant farmers and government policies of resettlement and integration into 'mainstream' Philippine society, and being pushed towards an entirely different form of settlement and subsistence. At social organization and forms of leadership remain, along with traditional knowledge of local landscapes, territories, resources and their exploitation. Resource sharing amongst the extended family and related bands has continued, as have traditional bilateral inheritance and bilateral post-marital residence patterns, and a strong sense of biological and cultural ties to their Ata ancestors (2010 interviews). The perhaps most emotional draw of this research lies with the often intangible aspects of the performing arts as a form of enduring cultural ideology among the Ata. In the ethnographic work, I learned through the informant Ignacio what it meant to dance like an 'Ata' – the movements were danced to a simple drummed beat, coupled with rhythmic foot stomps, choreographed arm movements; the dance captured Ignacio's childhood and adulthood, but also signaled the possibility of the end of this art form with the dying of his generation. At the same time, the contemporary Mabini Ata, like their ancestors, appear to be equipped to some degree to adapt to the realities of the contemporary Philippine capitalist economy, as well as the political maneuvering and social solidarity an 'Ata' community needed to survive in a modern multi-ethnic state.

From ethnographic observations, Ata identity, knowledge and cultural expression have not vanished completely. They remain in the elderly who fight to maintain these Ata ways intergenerationally, whether by holding on to metal hunting weapons once used (Figure 2), teaching the youth how to play traditional music and dance (Figure 3), or even through the staunch resistance to culture

change demonstrated by Negrito bands in the interior, with the selecting of a full Negrito leader, and limiting their own access to the Canggohob mill (2010 interviews, personal observation). The ethnography of Central Negros, over time, provides specific case studies that elucidate how and why settlement patterns of Ata foragers may have changed prehistorically and historically. Most importantly, this ethnoarchaeological study sheds light on where these interior sites may be located for future archaeological research, differences that may exist between Ata settlements socio-culturally, and it even presents analogies that gain access to intangible aspects of forager culture change and cultural resiliency spatially and diachronically.

Conclusion

Essentially, the foragers of the central Philippines, more specifically the Ata of Negros, adopted many of the traditions and ways of those with whom they had come in contact over many centuries, whether directly or indirectly. Historic records, while almost exclusively in the voices of adjacent lowland complex societies, foreign traders from China, and later colonial powers, provide a glimpse of the prowess of foragers in shifting their economic, political and social strategies to fit with complex interactions with outsiders. Archaeological work in the region also



Figure 2. Bais City Negrito leader with hunting tools. Photo: L. Smith.

documents changes in the intensity and nature of interactions over time, as well as the ways in which these foragers may have changed their movements in the landscape and their economic repertoires to maximize advantage from traded resources and minimize conflict, social impacts, and cultural threats. Despite these sustained contacts over millennia, what it meant to be Ata has remained through resilience, whether it meant to possess phenotypically dark complexions and more tightly waved hair, or the ability to recall the lineage of your Negrito ancestors. It may have meant the ability to recall traditional medicinal remedies from the original Ata terms, or even the ability to feel the rhythms of the ancestors and dance like the Ata of over a century ago. Here I hope to have demonstrated that

the cultural strategies that support resiliency over both the short-term and long-term can best be studied through an approach that combines historical analysis (where practicable), with the extensive temporal framework and materialist perspective of archaeology, and ethnographic studies of descendent populations that focus on memory culture and their contemporary coping mechanisms for dealing with externally-imposed change.

This emphasis on resiliency moves the field of anthropology further away from the idea of a vanishing indigenous group that is no longer 'traditional' or 'genuine', but instead affords small-scale societies the same claims as others to change in integral beliefs, traditions, and identities through innovation, accommodation, and flexibility in cultural practice over time.



Figure 3. Dancing to traditional Ata music, with three generations. Photo: L. Smith.

Acknowledgements

I would like to acknowledge Laura Junker, University of Illinois at Chicago, for her valuable guidance and continued support, and to thank an anonymous referee for their comments on this paper.

Megalithic rituals of the Maram tribe of Manipur

Binodini Devi Potshangbam

The Maram is one of the largest indigenous tribes of Manipur. This community has its own dialect, social organization, religious and cultural life, including the practice of erecting huge megalithic structures of different types even today. The raising of such megaliths is accompanied by elaborate sacrificial rituals. This paper deals with the megalithic rituals practiced by the Maram tribe, analyzing how megalithic rituals are interwoven with the social structure of this tribal community, and discerning diversities that exist among different villages of the same tribe in the method of erection of these gigantic structures, the performance of related sacrificial rituals, and the complex processes of preservation of this prehistoric tradition in modern times by the Marams, even those who have come under the influence of Christianity.

Introduction: the people and their social political system

Manipur is a small hilly state of India bordering Myanmar. There are thirty-three recognized scheduled tribes in this state. Of them, the Maram is one of the indigenous and largest tribes, occupying the north and northwestern part of the Senapati district, and concentrated in the Mao-Maram sub-division (Tadubi

Block). Scattered pockets of Maram are also found in the Sadar Hills sub-division (Kangpokpi Block) of the same district. There are thirty-two Maram villages. These villages come under three circles: (i) the Maram Khullen circle, (ii) the Willong circle, and (iii) the Senapati circle. The Maram people belong to the Tibeto-Burman family of the Mongoloid racial group (based on somatometric measurements and somatoscopic observations). The area inhabited by this tribe lies between 24°0'-24°3'N and 93°15'-94°0'E (Figures 1-3). This discussion of megalithic rituals is based on ten years of intensive research in the Maram area (Potshangbam 2011), from doctoral research investigations in 1988-1994, and then in 2000-2001 for a study of the art and culture of this tribe sponsored by the Department of Culture, Ministry of Human and Development, Resources Government of India.

Every Maram village is governed by the traditional village council and village authority. The council



Figure 1. Administrative map of Manipur showing location in the Indian Union. Map: B.D. Potshangbam.

is headed by the chief of the village, known as *Sagong* (village chief). He is assisted by a number of *Kapras* (councillors), each of which is the representative of each clan of the village. The selection of *Kapras* is based on seniority. The *Kapras* are equally important and are expected to discharge their respective duties in the village administration. The Maram political organization is thus quite democratic, and these village officials serve largely at the pleasure of the people they govern.

The functions of the traditional village council are broadly executive, administrative and judicial. The councillors are the real body in whom the highest power of the village is vested. They are at the helm of the affairs of the village, formulate the policy of the village in war and in peace, and amend the unwritten laws, which are then rigidly followed. Unlike other tribes, the Maram have only one supreme ruler of all Maram villages. He is their king. Each village follows the rules amended by him.

In each Maram village, the *Sagong* (village chief) has a dual obligatory function. One is in religious spheres, and the other is as secular head. In religious function he is assisted by an *Atingba* (village priest), whereas in the secular function he is assisted by the *Kapras*.



Figure 2. Map of undivided Senapati district, Manipur, showing its location in the state. Map: B.D. Potshangbam.

It is reported that at any rites and rituals conducted by the village priest, the physical appearance of the *Sagong* is demanded by Maram customary law. He takes a very important part in the proceedings of any kind of rite and ritual; a ceremony performed in the absence of the *Sagong* is meaningless.

Ancestor worship and megaliths

Megalithic cultures and memorial stones in India have been discussed by Hutton (1922), von Furer Haimendorf (1943), Childe (1948) and Settar and Sontheimer (1982). The erection of a memorial stone near a grave is also a common scene among the Maram people, and the preservation of such a stone is associated with the luck of the family. The timely care of a memorial stone by its family is duly associated with the worshipping of ancestors. In all Maram villages there are many such gravestones raised by children for their deceased parents. The sons and daughters treat such stones as their parents forever.

There are also various types of megaliths which abound in every Maram village. They can broadly be divided into eight types (Table 1).

Beitung (witness stone)

This megalithic type (Figure 4) is connected with oath-taking rituals related to various crimes, such as land disputes, theft, quarrelling, adultery, rape, disputed paternity, etc. The Maram people have a deep-rooted faith in oaths, which are respected by them to such an extent that these are very rarely taken. Generally, these are resorted to only in the most serious cases where all other means fail. The Beitung are considered holy, so much so that no one dares swear falsely on them. They also consider that even the death penalty may be sanctioned by the spirit of *Beitung* against an accused person if he or she swears falsely on it.

The Marams believe that if an oathtaking ritual is performed, the spirit of the Beitung will sort out the guilty person and punish him or her according to the severity of the crime. Three types of ritual are performed for every disputed problem: 1) striking the menhir part of the Beitung using the butt end of a billhook (*dao*); 2) sacrificing a cock on the flat horizontal stone; and 3) cutting the tail of a cat on the flat stone part of the Beitung. Each ritual is performed by the individuals involved in the disputed matter, along with the oath taking process.

Ranii Atu (resting place/vantage point)

Every Maram village has a number of such megalithic structures (Figure 5), depending on the number of clans; each clan constructs its own cairn to serve as a resting place, vantage point and stone lookout. For example, the Willong village has three *Ranii Atus*, representing each of the three clans. While constructing these cairns, each clan competes with one another to raise the best cairn. This kind of competition among different clan groups in constructing the cairns contributes to enhancing the social value of the megalithic structures.



Figure 3. Map of undivided Senapati district, Manipur, showing the distribution areas of Maram tribe. Map: B.D. Potshangbam.

Serial No.	Local name	Classified structural types	Functional types
1	Beitung	menhir associated with dolmen	witness stone
2	Ranii Atu	cairn	watch tower/resting place
3	Tiisum	menhir	memorial stone
4	Arou Atu	dolmen with/without raised structure	Gravetone
5	Tiirosum	horizontal flat stones resting on the ground or on supporting stones	stone seats
6	Amailui	small avenue raised to represent the 1906 male population of the village	cluster of miniature menhirs
7	Atu chaga kamatei	monolith	holy stone
8	Raling / Atu amei gogisa phuigung kai karanijangba atuai kaibamle	cap-stone	a flat stone covering a burial pit where decapitated heads are buried

Table 1. Megalith types in Maram villages



Figure 4. Beitung (witness stone). Photo: B.D. Potshangbam.



Figure 5. Ranii Atu (resting place/vantage point). Photo: B.D. Potshangbam.

Tiisum

Each of these menhirs is raised by a merit-seeker in his or her name or in the name of loving parents or relatives. Such menhirs (Figure 6) are found in and around a Maram settlement area in the form of an alignment or avenue. Such a stone-raising place is called Katak in the Maram dialect. A wealthy man or woman may raise menhirs in his or her name to attain a high social position which the majority of the group cannot aspire to reach during their lifetime, or even after their death, if their descendants had a view to preserving their names forever on the rocks. Thus, a wealthy person makes a stipulation in a verbal will that a memorial stone will be planted in his or her memory. If the wealthy person has already performed a stone-raising ceremony and erected megaliths, he or she must seek permission from the village chief. After declaring these wishes or getting permission from the village chief, the intending merit-seeker must observe special social sanctions and restrictions (genna), such that for a year before planting the menhir(s) the intending merit-seeker lives apart from his or her spouse. If this is not observed, the stone to be erected will crack, and as a consequence the merit-seeker's family will suffer in many ways.



Figure 6. Two examples of a Tiisum (memorial stone). Photos: B.D. Potshangbam.

The intending merit-seeker also worships the supreme god '*Sarah Gungba*' to prevent occurrence of natural calamity like earthquake, or death in his or her family or kin, or in the village. If one of these events happens to the village of the intending merit-seeker, or in the neighboring villages (where kin reside), it is a must to postpone the stone-raising ceremony for a duration of one month for every such event.

Rituals involved in selecting and erecting Tiisum

The intending merit-seeker selects the desired stone according to the advice of an expert person (male/ female, who is experienced in the field). The individual does not take normal food, but drinks rice-beer and takes ginger. After selecting the stone, he/she touches the stone and utters: 'Ai atu I na jusa abadeng kabam I mareile aot luniile. Majiitu Majii kasu gomang lamkei mati-seilo', which translates roughly as: 'Oh

stone, I have selected you, hence you will be mine from today. Please come to me through my dream and tell me what you wish.' Then he or she will take out some moss (spa) from the stone and return home. That night at home the merit-seeker sleeps, keeping the moss under his/her pillow and dreams on it. During the one year *genna* the merit-seeker collects the materials required for the stone dragging and raising ceremony in cash or in kind. This means at least 2000-4000 liters of rice-beer - which means a large amount of rice. Rice pounding starts fifteen days before the actual ceremony, and preparation of rice-beer starts a week beforehand. Preparation of the sled and collection of stone-dragging creepers are also done during this period.

Auspicious days for dragging and setting up the menhir are fixed by the *Sagong* assisted by the *Atingba*. The head and base of the selected stone are sorted out by the experts in this field. The Marams believe that a planted stone causes much harm to the performer and his/her family if mistakes are committed in erecting the menhir.

In the early morning of the stone-pulling day, the merit-seeker performs a ritual on the spot where the selected stone is quarried. The host offers an egg to the spirit of the stone. The host puts six pieces of cotton at the foot of the selected stone first, and then six pieces of iron are placed just above the cotton pieces. They consider such an offering as a sign of paying tax. Then they shout '*Magu oh oh ui*' ('We have won and paid taxes') at the same moment as the host offers the leaves of a small fruit bearing tree. All the participants offer in this way. They also chant '*Atho ai ara chiimagasha puile*' – 'We have won, purified, and taken (our share of) the stone'.

The stone-pulling ceremony is a spectacular event in Maram society (Figures 7-9). In fact, all the villagers of all ages, including young children adorned in their full ceremonial dress, join the stone-dragging party, in a procession of at least two hundred or more. When the signal is given, all start to pull the



Figure 7. Tying the stone-dragging rope. Photo: B.D. Potshangbam.



Figure 8. Stone dragging in progress. Photo: B.D. Potshangbam.



Figure 9 The stone is ready to plant. Photo: B.D. Potshangbam.

stone. It is a very strenuous job indeed to pull the heavy stone along the steep hill slopes and sharp bends of hilly tracts, but the experienced stone pullers can negotiate these smoothly, and drag the stone to the selected place. When the stone reaches half-way, the stone pullers take a rest. During this period, drinks are served with some food to refresh the pullers.

The stone is thus pulled up to the selected spot. Here the sled is wedged to guard against possible slips, after which the stone is held on the sled for a considerable length of time. Once the stone is left in the *Katak*, it is prohibited to touch the stone no matter what happens. The pullers leave the place, and they enter their houses after cleaning their hands. On the next day, or third or fifth day (but within five days) they prepare to raise the menhir. For this they arrange long poles of hard wood, and plant them on the ground to use them as a fulcrum. At the foot of the sled, on which the massive stone is pulled up, a hole about one and a half feet deep is dug. The used lashing around the stone is then cut off and new ones are made. Inside the hole, the merit-seeker puts some iron objects like a hoe-blade, knife or sickle.

A ritual is performed. The Sagong/Atingba chants 'Hé Sarah kiichina chiilung katang lohingsha hangsha pyiishailo' – 'Oh God Hé sara kiichina give me long life and prosperity'. The Marams believe that the performer will attain a longer life, as the iron objects and his fame will be everlasting as the stone. They generally lift the stone in an inclined position for sliding the base (foot) into the excavated hole. By pulling from the front and propping the stone with longer wedges from behind every time, the stone is erected at last with the shouting of 'hoi'. The stone is wedged underneath to make it stand firmly on its own base, after which the hole is filled with earth and rammed.

On this stone-raising day, the merit-seeker feeds invitees, guests and the villagers, and distributes uncooked meat and rice-beer to each and every household of the village. Drumming, singing and dancing continue the whole night by the members of the boys' and girls' dormitories. On the next day, the merit-seeker gives another feast to the villagers and with this concludes the stone-raising ceremony.

Arou Atu (gravestone)

This is a flat stone directly resting on the ground, capping a grave. Sometimes it is placed on a raised platform (Figure 10). It is constructed in memory of one's parents or any other deceased person of the family. In rare cases there is also an upright stone, inscribed in Roman script, stating birth and death of the deceased person. For constructing such a structure, the stone selection and pulling processes are similar to those of the *Tiisum*, but the ritual is different. No purification is done on the spot where the selected stone is quarried. After selecting the stone, it is pulled to the burial spot and place over the grave. Thereafter they perform a ritual called Rausam kuitu. While performing the ritual the Atingba utters 'Hé sarah gongpa, nejiina sagenna kajii poikajii matune kuitun, ating, sadzii, oi golmale, poikajii matumtai gojeiketo steichii goma satoinei kargajasa tiimatei pejii sailo steichii te kaleiba Rangii lamto nangna kasui psiilo tajau-sa karingmei tii tiilungdo jumaye seilo', which roughly translates as: 'Oh God you are the creator of all. The stone, the land, the forest, the trees, bamboos etc. all belong to you. We are using these things by your grace. Even if this gravestone is a bad one, please transform it to a good one. We wish to become the fortunate ones with your blessings. Please keep the soul of this deceased person in heaven'. The performer sacrifices a bull, buffalo or *mithun* (Bos gaurus) to propitiate the soul of the deceased person in whose name the Arou Atu is raised. The donor offers a grand feast, and thus the grave-stone raising ceremony is concluded.

Atu chaga kamatei

This holy stone is a naturally occurring stone (Figure 11). The Marams of Willong village believe that *Atu chaga kamatei* fell down from the sky in ancient times. It plays a very important role among the followers



Figure 10. Arou Atu (gravestone). Photo: B.D. Potshangbam.

of the traditional religion of the Marams. It is related to socio-religious functions and no one is allowed to touch it. If someone touches the stone knowingly or unknowingly, a heavy fine is imposed upon the guilty person. The *Atingba* purifies the holy stone by sacrificing a bull or cock. He smears the blood of the sacrificed animal ritually upon the holy stone.

Amailui

This is a small avenue formed by four rows of alignments of miniature menhirs (Figure 12). There is only one, and it represents the male population of the Zongnamei clan of Sangkhungmei village. The avenue was made in 1906. Each miniature menhir represents one male member of the clan. No ritual is performed for this megalithic structure.

Figure 11. Atu chaga kamatei (holy stone).

Photo: B.D. Potshangbam.

Figure 12. Amailui (small alignments). Photo: B.D. Potshangbam.

Tiirosum (stone seats)

These 'stone seats' are clusters of dolmens set up at regular intervals to serve as a public resting and meeting place (Figure 13). Each hamlet of every village has a number of such structures. These are raised collectively by the people of each hamlet without performing any rite and ritual.

Raling / Atu amei gogisa phuigung kai karanijangba atuai kai bamle

This megalith (cap stone) is a flat stone which covers a secondary burial pit (Figure 14). It is found at the courtyard of the house of the Willong Khullen village chief (*Sagong*). It is placed only when the chief's house is repaired.



Figure 13. Tiirosum (resting place). Photo: B.D. Potshangbam.



Figure 14. Cap stone lying over burial pit. Photo: B.D. Potshangbam.

Discussion

In Maram society, the person who is resourceful in terms of manpower and wealth, and who has passed the three stages of prosperity in their lifetime is considered to be a wealthy person. The three stages are: 1) *Azoubai / Haibai, 2) Ara katii* and 3) *Heijou / Heijou tou.* The first stage is very simple. It is the offering of rice-beer to the aged people of the *Khel* (hamlet) if there was a good harvest for the year (that is, not less than the transporting capacity of one hundred men at a time, say 60 kg x 100 = 6000 kg at least), called *Ato hai.*

The second stage is performed when the same person is able to collect a good harvest also in the next year. The person performs a ritual and sacrifices three, five or seven cattle, and distributes the meat to each and every household of the Khel. A feast is offered to the people of the hamlet and the person's house is ritually purified. The food and drinks arranged for the feast should be consumed on the day of Ara katii, and are not allowed to be consumed the next day. The remainder is thrown out on the main road of the village. At this second stage the host worships Sarah Gungba (supreme god), asking for him to grace him forever, by uttering 'Sarah Gungba dato satoi kangtu, Ara gasa lungtang karam kani koshii kadau kasu jangbii Atiilung lungmakuisa lungtang karam jangba. Amei Amoi stui/satoi

kangkatu jangba Ara – katii aite' – 'Oh God Sarah Gungba please bless me. Favor me to prosper in all respects. Please increase the number of cows, oxen, buffalo, goats, dogs, fowl, and areas for cultivation having good fertility. For this I am performing this *Ara-katii* ritual'.

Heijou / Heijou tou is the third stage. It is the feast of prosperity. At this stage the prosperous person offers another feast to the villagers, along with the people of neighboring villages. It is a must to attend this feasting party for every person who receives an invitation, otherwise they will be considered sinners. After performing this feast, the prosperous person attains a high social status called *'Kani kahii Achiilung kito samakado jakasu'*, the most resourceful person of the village in terms of manpower and wealth. Thereafter the host is allowed to wear a title cloth called *Tuchiipai* and to decorate his house with carvings.

The person who passes these three stages is allowed to raise a memorial stone in their name.

After performing the stone-raising ceremony, the merit-seeker is again allowed to wear a title cloth called *Tuchiipai*. The performer is also allowed to decorate their house with a pair of house horns and carved front wall. Thus the house is decorated with carved heads of animals, including human heads (restricted to only some people); such types of decoration are closely related to the traditions of the Niassians of southern Sumatra, Indonesia (Schnitger 1964: 145, 150, 152; see also Bonatz 2002, 2009; Koestoro Lukas Partanda and Wiradniyna Ketut 2007).

The carved heads and statues on megaliths in Indonesia and on wooden planks in Manipur are not ornamental (von Furer Haimendorf 1943: 74; and personal observations). These are the commemorative representations of animals sacrificed during feasts-of-merit. Thus, their value is not only aesthetic but also definitely symbolic. It may be ascribed as the symbolical character to the art of the early megalithic culture of Southeast Asia. The ideas discussed here associating megalithic rituals with gaining prosperity and prestige for the living, and with establishing links with the souls of deceased persons, are similar to the megalithic cultures of Indonesia (von Furer Haimendorf *op. cit.*), which suggests a connection between the megalithic complexes extending from northeast India to Southeast Asia. Social life in both regions is dominated by megalithic tradition and the required feasting, ceremonies and rituals involved in this (e.g. Perry 1918; van Heekeren 1958; Loofs 1967; Misra and Bellwood 1985; Adams *et al.* 2004). The most common factor in both areas is the feast-of-merit, and carving of buffalo or cattle horns, as well as the erection of carved statuettes over the graves of individuals who had committed sin during their lifetimes.

Conclusion

Megalithism is a living tradition among the Marams of Manipur. Even the Christian converts among the Marams also raise menhirs, with some modification, as memorial and commemorative stones while they are living and after their death. This paper discussed the eight types of megaliths in the Maram area: witness stones, memorials, watch towers, gravestones, stone seats, small avenues representing the population of a clan or village, holy stones and capstones. In Manipur, particularly among the Marams, this megalithic tradition has continued from time immemorial (as my informants reported to me when queried about it). To date no excavation work has been done in this Maram area, as most of the megaliths are within the living tradition of the community. The megalithic tradition of the Marams has close similarities to that of Southeast Asia, particularly with the Niassians of Indonesia, in holding the feast-of-merit and cattle horn carving traditions. This study suggests the need for a long-term in-depth study to highlight how these traditions are related with one another.

The hidden, unique, bronze battleship from Mt. Dobo, East Flores, Indonesia, assumed to date to the Dong-So'n period

Herwig Zahorka†

A miniature filigree Bronze Age boat assigned by scholars to the Dong-So'n period was discovered in the early twentieth century by a missionary at Mt. Dobo, Flores. Numerous bronze objects, including kettledrums and axes, exist from this period. This bronze boat, however, is unique. There are no other ship models known among all Southeast Asian cast bronzes. Despite this, the model has passed almost unnoticed by archaeologists. Beside the missionary's report, only three scholarly papers were published on this fine ancient example of high craftsmanship between 1914 and 1985. Some parts of the deck and the platforms of this miniature ship have now been broken and lost. This article attempts to add to former information and gives new interpretations on the special design of this battleship based on multiple close-up photographs the author took in 1990 and 2009, which give a hint as to how the practice of pirate sea attacks may have been executed during the Bronze Age.

Introduction: the history of the Dobo Dong-So'n bronze boat

During one trip made by the Dutch Jesuit missionary J. Sevink to East Flores before World War I, the people of a Mt. Dobo village (District Kewapante, Subdistrict Sikka) showed him a bronze boat which was then, and still is, carefully hidden in the nearby forest. Sevink (1914) provided a description of the boat and reported the lengthy legend of its origin and arrival, as narrated by the people of Dobo, who consider it to be a ritual object. Fortunately, he also provided a rough drawing of the object, although some details do not match details on later photographs (see below). A high pole amidships could indicate the presence of a broken mast (Figures 1 and 2).

Sometime in the late 1930s, the Dutch missionary scholar B.A.G. Vroklage visited this place and published a description of the boat and the legend told of its arrival in Dobo, which varies from Sevink's report, though in both versions the boat's origin was in the far west of Flores (Vroklage 1936, 1940). In his Dutch and German articles on prows in the cultures of Flores, he published three photographs of the boat, which at that time was hanging on rattan cords. On his black-and-white photo it is difficult for the observer to distinguish details and determine what is rattan and what is part of the boat's structure. Vroklage tried in vain to purchase the object.



Figure 1. The bronze battleship's starboard side. Photo: H. Zahorka 1990.



Figure 2. Sevink's (1914: 4) sketch of the bronze battleship, depicting the larboard side.

Later, in a research survey in 1968, the archaeologist J. Maringer visited Dobo village, saw the boat and took some photos which, regrettably, were not published. He was told about and published the legend of the boat, which was somewhat different from the versions published by Sevink and Vroklage, but the origin of the boat was also said to be in the West. Maringer did not describe the boat, but he published two detailed drawings, obviously drawn from photos taken by Vroklage. He referred to comparable boats depicted on some big bronze kettledrums generally assigned to the Dong-So'n period. His short German-language paper was published after his death, twelve years later (Maringer 1980).

The most voluminous publications on the boats depicted on Southeast Asian kettledrums are those of Spennemann (1984, 1985a, 1985b). He had not seen the Dobo boat but knew of the published images and the publications. He compared the style of the boat and its figures with the stylistic details of depicted boats and figures on numerous early kettledrums of Heger I type. In this way, he could assign a date and place of origin for the boat model (Spennemann 1985a, 1985b), and referred to boat structures depicted on bronze axes from Dong-So'n (Spennemann 1985b). He stated that all of the boats depicted on kettledrums and axes were open canoes or dugouts, while the miniature bronze boat from Dobo shows a low-board upon which a hull is constructed, most probably with ribs.

Assessing age and provenience

The Dong-So'n culture spans a long period of time, which is divided into three époques (Van Trong 1979; Solheim 1983: 9f): namely époque I from *c*. 1000-400 BC, époque II from 400 BC to *c*. AD 300, and époque III from *c*. AD 300-1000. During époque II, the core time is considered the Han period, from 206 BC-AD 8 [western Han] and from AD 25-220 [eastern Han] (Spennemann 1985a: 146, 148, 165).

A stylistic analysis of the boats and passengers depicted on Heger I type kettledrums (e.g. Figure 3) and boats depicted on ritual axes from the western Han, along with depictions of the weaponry, clothing, and the shape and construction of the bronze boat, shows they are all highly similar in appearance (Spennemann 1985a, 1985b). Based on this, Spennemann suggested (1985a: 173, 174; 1985b: 240) the bronze boat was produced in the first century AD, around the area of the Gulf of Tonkin. He estimated the time of import to Flores as being in the early second century AD, because some kettledrums dating to this time are found on Flores and on nearby islands. The time of import was said to coincide with the introduction of wet rice cultivation.

Construction design

The overall length of the filigree bronze boat model is 56 centimeters and the overall height is 19.5 centimeters (not 9.5 as Maringer (1980) wrote). It is heavy. The width of the hull at the stern is 8.5 centimeters. The semicircular cross-sectioned keel shows a high stern and high bow, indicating the ship depicted would be seaworthy. It is not a river boat. Upon the low-board a hull with ribs is constructed (Figure 4). Inside six openings of the hull at starboard and at larboard six pairs of paddlers are seated. These are not rowers because they face the front. Inside the hull are four standing individuals with extended arms from pole to pole along the keel line.

On the upper deck stand three platforms, all no longer complete. The two highest, at stern and bow, are built on four supports (Figure 5). They have lost their starboard railings. Both are mounted by a soldier. The figure on the stern platform was still complete when recorded in 1990, and equipped with shield, spear and a long, pointed helmet. Remnants of broken legs on the fore platform indicate there used to be another similar figure there.


Figure 3. A boat depicted on a Dong-So'n Heger I type kettledrum (after Goloubev 1929: 22).



Figure 4. The boat, larboard side, at its altar-like resting place in the center of rocks. Photo: H. Zahorka 1990.



Figure 5. A full view of the boat's starboard side Photo: H. Zahorka 2009.

The platform amidships is much lower and most of it has been lost. What seems to be a cockerel sits upon a horizontal beam under the rear platform. Just below is an unfinished figure lacking a head and probably depicting the helmsman, because one arm and one foot are fixed to an arc-like construction that looks like a rudder.

The incurved bow seems to be armored with a solid coat. Its pointed upper part ends in a semi-crescentshaped appendage. Below this pointed bow, a protruding construction is mounted which appears to be a ladder-like boarding plank (Figure 6). A soldier, also wearing a high pointed helmet, stands on it with shield and spear. Like the other soldier at the stern platform, the figure wears a short, folded loincloth. At the outermost tip of this plank, a figure in a helmet is kneeling, bowing down to the sea, holding a ring at the base of which is a solid, roundish protrusion, possibly a bell. Below this plank is another protruding construction, like a ram, with a figure bent down and holding a board with pointed toothlike shapes on its underside. Just below this board is another board with the same tooth-like forms pointing upwards. The function of this construction awaits a plausible interpretation, and the possible presence of a mast has thus far been denied by all scholars who have published on this boat.

Remarkable details and new interpretations

The construction of this filigree bronze vessel is a technical miracle. There are no marks of plumbing or soldering of the pieces together; this technique could not be executed at the time of construction. Bronze casting during this period was executed by the 'lost wax method', in which a wax prototype would be formed and carefully enclosed in a clay mold and heated to harden the clay while the fluid wax could escape through small openings. The molten metal would then be poured into these openings, and after cooling down the clay cover would be removed. A detailed description of this casting method is given by Bernet Kempers (1991: 27f).



Figure 6. The bow seen from starboard with its broken platform and the remains of two legs. In front are the two protruding constructions occupied by three warriors. Photo: H. Zahorka 2009.

The Dong-So'n kettledrums were cast in this manner. The tympanum-cum-cuff was cast separately and mechanically fixed to the drum's body, because plumbing or soldering was, to our knowledge, not available yet. How this complicated bronze boat with its many figures could be cast using this method is still a mystery.

The six paddlers on both sides are all different individuals (Figures 7 and 8). Some seem to have long beards, while others do not. All have prominent noses. These are features are rarely seen in depictions of contemporary inhabitants of the Tonkin Gulf, the assumed origin of the boat (the 'pontische Wanderung' by Heine-Geldern (1951) comes to mind, as the figures feature 'western longnoses'). The paddlers' arms are elongated, and their legs are short. They do not wear helmets. The four standing individuals within the ship's hull along the keel line with extended arms also look different from one another. The first and the fourth wear helmets, while the two in between do not; perhaps their heads were not fully cast?

The most interesting parts of the ship are the constructions and figures at the bow (Figures 6, 9, 10). The platform there on four supports has lost the starboard railing. Remains of two broken legs indicate a lost figure like one standing at the rear platform. The remaining nubs are round and smooth as if the metal was melted off; these types of gleaming round dots are seen at several spots on the boat.

Two constructions protrude from the front of the solid coated and interestingly-designed bow. A longer structure, like a boarding plank, sits above a shorter structure below. This part of the boat is complete and attracts the most attention in regard to equipment suggestive of an attacking battleship. Three soldier figures are here engaged with different tasks, as seen from the larboard side in Figure 10.



Figure 7. The four front larboard paddlers are seen, as is the second of the four standing individuals with extended arms. The first and the third are obscured in this picture. Photo: H. Zahorka 2009.



Figure 8. Both the second and third paddlers at the starboard side have prominent noses, the third most probably with a long beard, and the second without one. Behind them is the first standing figure wearing a helmet, while the second standing figure has none. Photo: H. Zahorka 2009.

The standing figure with a prominent nose is equipped with a rectangular shield, held in front of the body in one stretched-out arm, and a spear above his head ready to throw in the other. The grip is in the middle of the longish object; therefore, it is clearly not a sword. The figure is dressed in a folded, very short loincloth and a helmet similar to a Phrygian cap and seems ready to attack a hostile boat.

The figure that is kneeling and bending down holds a heavy object (Figure 10); the former assumption by Spenneman that it is a bell cannot be verified. A bell at the bow of a battleship would make no sense;



Figure 9. The front details seen from the larboard side. On the right, down on the boat's body, an arrow-shaped high relief feature is visible. Photo: H. Zahorka 2009.

Figure 10. The three interpreted warriors seen from the starboard side. The lower two are handling some strange equipment, which challenges the imagination Photo: H. Zahorka 2009.

the appropriate place for a bell would be on a mast (if there were one). It could also be a sounding line for gauging the water's depth, and/or used in attacking a nearby enemy boat by throwing the heavy weight into it and pulling it with the line. Of interest is also the helmet of this figure; it seems to have a plaited structure.

The most mysterious element of the ship's design is the helmed warrior with the two 'toothed' planks

below him at the ship's keel. The upper plank has four 'teeth' pointing down and the lower one has three 'teeth' pointing up. If we are concerned with a battleship, it could have something to do with boarding the enemy's boat. For example, if the upper plank is moved forward its two front 'teeth' could 'bite' the enemy's ship's side while the rear teeth are still dovetailed or meshed with the 'teeth' of the lower plank. This would fix the two boats together. The real boards surely were longer and had more 'teeth'. However, other interpretations are possible.

Although the starboard railing of the rear platform is also missing, the warrior standing on it is still in good condition. Like the front fighter, this figure is equipped with a shield, spear and helmet and wears a short, folded loincloth, with a small belt across his waist. He seems to be bearded. On a horizontal beam on the rear side just below



Figure 11. The rear platform with the warrior and cockerel on the vertical beam seen from the starboard side. Photo: H. Zahorka 2009.

Figure 12. The lowest part of the stern with the cockerel, the last of the six paddlers and an incomplete figure, most probably depicting the helmsman tending the rudder, seen from the larboard side. Photo: H. Zahorka 2009.

the platform sits a cockerel (Figure 11), whose head points toward the stern of the ship. Whether this had a special function for the boat is unknown; a cockerel could have been an encouraging mascot for the crew. Figure 12 shows a closeup of the last of the six larboard paddlers, with a prominent nose and a beard (my interpretation). At the tip of the stern is an uncompleted figure, with no head. Because one arm and one foot of this figure are fixed to an arc-like construction, which looks like a rudder, this figure most probably depicts the helmsman. A cast, framed, arrow-like high relief is visible on the larboard stern. The meaning of this is unknown. It could have been the emblem of the production community. The same sign is visible on the larboard keel (Figure 13).

A top view of the ship shows the filigree ribs of the hull. On the right is the ladder-like boarding plank and to the left is the shield of the rear soldier. A battleship of this size surely had a mast and sails. The short mast on Sevink's 1914 sketch is obviously broken off (Figures 14, 2). Its base is at the bottom of the boat, indicating that it was most probably a mast.

The location of the boat in the mountains east of Maumere, Flores



Figure 13. The framed arrow-like sign in high relief on the larboard keel. The holes in the ship's body were products of the casting technique. Photo: H. Zahorka 2009.

The boat is carefully hidden in a secret place in the forest just below the village of Dobo. The locals who showed me the boat did not reveal its hiding place. However, there is some

information on its importance and how they take advantage of it. Offerings must be made in order for the boat to be brought out. The people of Dobo have prepared a location consisting of several rocks in circle, situated on a narrow old footpath to the village, as a place for showing and worshipping the boat (Figure 4). There they set the boat into the center of the rocks. They told me in 1990 and 2009, that during threatening situations they dance here around the boat, swinging bush knives and blow flutes to ask the spirits of the ancestors of the war canoe for support. They are Catholics, though. In my 2009 visit and surely for several years previously, this forested area was fenced with walls and barbed wire all around. This was not the case in 1990. A locked entrance gate below the forest is crowned with a large concrete replica of the boat with a mast (Figure 15). The lock's key is with the guardian of the boat (Figure 16).

The drivers of taxis and ojeks (motorcycle taxis) in the East Flores' capital of Maumere generally do not know the remote village of Dobo or the way to it. In order to find the village, visitors have to take the road from Maumere east towards Larantuka, turn south near the village of Gelinting, and take a forest road in the small village of Bao Batun, which ends just below the village of Dobo. Visitors then have to walk about 100 meters up a very steep concrete path to meet the guardian of the boat. The village of Dobo is the traditional keeper of the bronze boat, which the villagers consider a holy ancient relict. However, they have no verified knowledge about the age and the origin of this unique antique object, or when it came to this mountain.



Figure 14. The bottom of the ship (upper). The holes in the body come from the casting technique. The top view of the battleship (lower). The arrow points to the interpreted broken mast. Photos: H. Zahorka 2009.



Figure 15. The entrance gate to the fenced forest with the hidden boat. The replica above the gate still has a mast. Photo: H. Zahorka 2009.



Figure 16. The author with the custodian of the bronze boat, Sergius Moa from Dobo village. Dobo Forest, August 2009. Photo: H. Zahorka.

According to Spennemann (1985a: 240): 'This ship model represents a type of vessel unknown so far from prehistoric and early historic Indonesia'. Therefore, this ship is not only the most valuable inherited object to the people of Dobo, but also a unique object for further research.

Acknowledgements

My grateful acknowledgements are given to Rini Hogewoning with KITLV library at Leiden and to Günter Darcis with Linden Museum library at Stuttgart for mindfully providing essential literature.

Kattigara of Claudius Ptolemy and Óc Eo: the issue of trade between the Roman Empire and Funan in the Graeco-Roman written sources

Kasper Hanus and Emilia Smagur

Trade between Asia and Europe has a long tradition. In the last centuries of the first millennium BC the Mediterranean world was united by a new empire with its capital in Rome, and the Romans traded with India and Southeast Asia until at least the fifth century CE. We discuss these relations here in light of historical sources. Roman merchants took advantage of Egyptian Red Sea ports, from which they could reach destinations in the Indian Ocean. Periplus Maris Erythraei provides important information about the geography and economy of India. From India, Roman goods travelled across the Bay of Bengal. The Romans knew about lands to the east of India; for instance, the works of Claudius Ptolemy describe land east of India, alter alia the city of Kattigara. The location of this important port is controversial; Óc Eo, on the northern coast of Vietnam, or Guangzhou are possible candidates.

欧亚之间的贸易有悠久的历史。西元前一世纪,以罗马为首都的新帝国统一了地中海地区,直至西元五世纪,罗马和印度及东南亚地区皆保持着贸易的往来。藉由历 史资料表现可展现出以上的贸易关联性。罗马帝国商人利用埃及的红海港口,前往其於印度洋的目的地。希腊文献「红海周航记 (Periplus Maris Erythraei)」为印度的地理和经济提供了重要的资讯。从印度出发货物经由孟加拉湾运送往罗马。当时的罗马人已知印度以东之地,例如希腊学者克劳狄 乌斯·托勒密 (Claudius Ptolemy) 即曾在着作中提及印度以东的喀第喀拉港 (Kattigara),但目前这座港口的具体位置尚在争议中:可能是位於今越南东岸的Oc Eo,亦可能是指称中国的广州港。

Introduction

Trade between Asia and Europe has a very long tradition. In the first millennium BC many trade routes bound these two continents. Pax Scythica on the Great Steppe, and the later rise of empires like the Seleucid, Kushan and Han created conditions whereby trade between Europe and China flourished. Those routes are known as Silk Roads. The land routes had maritime equivalents. Achaemenid and the later Macedonian expansion to the East drew the Mediterranean and Indian worlds closer (Uhlig 2007). Simultaneously, Indian traders explored lands that lay across the Bay of Bengal (Ray 1989). In the last centuries of the first millennium BC the Mediterranean world was united by a new empire with its capital in Rome, and at least until the fifth century CE Romans traded with India and Southeast Asia. We will discuss these relations in light of Graeco-Roman written sources.

The Periplus of the Erythraean Sea

For navigation, Greek and Roman sailors used *inter alia* documents called *periplus* ($\pi\epsilon\rho(\pi\lambda\circ\nu\varsigma)$). *Peripli* were documents listing in order landmarks along the coast, like ports, and approximate distances between them (Kish 1978). The Periplus of the Erythraean Sea (Greek: $\Pi\epsilon\rho(\pi\lambda\circ\nu\varsigma, \tau)\varsigma'$ $\epsilon\rho\nu\theta\rho\alpha\varsigma'$, $\Theta\alpha\lambda\alpha\sigma\eta\varsigma$, Latin: *Periplus Maris Erythraei*) was written by an anonymous author and is dated between AD 40-70. Although some elaborations give dates between AD 30 and 230 (e.g. Huntingford 1980), historians incline towards the middle of the first century, based on the chronology of the Nabataean kings presented in the *periplus* (Casson 1989: 6-7). The identity of the author is also controversial. At the beginning of the twentieth century, Schoff (1912) assumed that author was an Egyptian Greek, probably a merchant who lived in Alexandria or Berenice, and this interpretation still has the largest group of followers (e.g. Casson 1989). After Alexander the Great's conquest, the Greek Ptolemaic dynasty seized and held control of Egypt for almost three hundred years, until 30 BC, when the Battle of Actium was won by Octavius Augustus, and Egypt became a Roman province (Eck 2003).



Figure 1. A map dated to 1597 based on the Periplus (Ortelius 1597; from Wikimedia Foundation).

It is very likely that the author personally travelled to India, however his poor writing style (e.g. confusing Latin and Greek words), reveals that he was not well educated (Schoff 1912). The *periplus* describes the geography and trade relationships in the basin of the Erythraean Sea (Figure 1). In Greek $E_{\rho\nu}\theta\rho\dot{\alpha}$ $\theta\dot{\alpha}\lambda\alpha\sigma\sigma\alpha$ means Red Sea, but the modern sense of this meaning, being limited to the sea between Africa and the Arabian Peninsula (International Hydrographic Organization 1953: 20), is different than the ancient meaning. In classical written sources, like the *periplus*, the term *Erythra Thalassa* corresponded to the whole Indian Ocean, including the Arabian Sea and Persian Gulf. The document focuses on trade between the Roman Empire via the port of Berenice, lying on the Egyptian shore of the modern Red Sea, and southern Asia and western Africa. The anonymous author mentions that trade between the Roman Empire and India was increasing, correlating with worldwide trends in trade relationships at that time (Uhlig 2007).

The *periplus* gives a lot of information about many Indian ports, including Barigaza, which is described as a flourishing commerce center:

There are imported into this market-town (Barigaza), wine, Italian preferred(...); copper, tin, and lead; coral and topaz; thin clothing and inferior sorts of all kinds; bright-colored girdles a cubit wide; storax [a type of resin], sweet clover, flint glass, realgar ['ruby sulphur'], *antimony*, gold and silver coin, on which there is a profit when exchanged for the money of the country; and ointment, but not very costly and not much. And for the King there are brought into those places very costly vessels of silver, singing boys, beautiful

maidens for the harem, fine wines, thin clothing of the finest weaves, and the choicest ointments. There are exported from these places spikenard [an essential oil], costus [a medicinal plant], bdellium [an oleo-gum resin]. ivory, agate and carnelian, lycium [box-thorn], cotton cloth of all kinds, silk cloth, mallow cloth, yarn, long pepper and such other things as are brought here from the various market-towns. Those bound for this market-town from Egypt make the voyage favorably about the month of July, that is Epiphi. (The Periplus of the Erythraean Sea, chapter 49, Schoff 1912: 42).

East of India the author names a land called Chryse, Xpíoŋ, which means gold/golden, which we believe is an obvious reference to Suvarnabhumi [Sanskrit: सुवर्णभूमी: Land of Gold]. This is first mentioned in chapter 56, where, while describing market towns of the central part of the western Indian coast, it is said that, among other products, tortoise shells are imported from Chryse. The *periplus* gives us relatively little information about the location of Chryse: 'And just opposite the river [Ganges] there is an island in the ocean, the last part of the inhabited world toward the east, under the rising sun itself; it is called Chryse; and it has the best tortoise shells of the all places of the Erythraean Sea. After this region under the very north (...) in land called This [China] there is (...) city called Thine' (*The Periplus of the Erythraean Sea*, chapter 63, Schoff 1912: 48).

From this source we learn that people from the Mediterranean Sea basin had direct access to Indian markets, and commerce was intense (Schoff 1912: 1, 12). Indians were trading with countries to the east, and they shared their knowledge with Greeks and Romans [*Xpύση* -> सुवर्णभूमी]. In the beginning of the first century AD, Romans were aware of the existence of civilization in Southeast Asia.

De situ orbis

Pomponius Mela [Latin: Titus Pomponius Mela] is known as the author of the earliest Roman geographical treatise that has survived into modern times. Pomponius is believed to have been born in the Roman province of *Hispania Baetica* in southern Spain, into an Italic family, in the first half of the first century AD (Romer 1998: 1-2). Historians believe that his treatise *De situ orbis libri tres* [The Description of the World in Three Books] was written around AD 43 or 44 (e.g. *ibid.*: 3). *De situ orbis*, also known as *Chorographia*, describes all regions known to the Romans, from Gibraltar to Asia. The author describes his methods thus: 'Now for me, as I begin to describe its [the known world's] coastline and regions with greater preciseness, it is most convenient a) to begin from that point where our sea [the Mediterranean Sea] enters into the landmass [Strait of Gibraltar] (...) then b) to skirt the shores in the order they lie in' (Pomponius, *De situ orbis*, book I, chapter 24, Romer 1998: 40).

Pomponius devotes part of his book to a description of Asia, in which eastern continental Asia is divided into three latitudinal zones: Scythia in the north, Seres [China; *seres* in Latin means silk or people of the silk] in the middle, and India in the south. East of India he names two islands, probably the easternmost-land inhabited by people. It is very likely that this land corresponds to Southeast Asia. However, the description is very residual. The location of the islands known as *Chryse* – Golden – and *Argyre* – Silver – is east of the mouth of the Ganges (Clifford 1904: 4). While *Chryse* may be identified with the Malay Peninsula, the position of *Argyre* is more puzzling. Some scholars connect the silver island with the Myanmar coast, possibly Arakan (Suarez 1999: 63). The ancient author offers a vision of fertile land: 'In the vicinity of Tamus [China?] is the island of Chryse, in the vicinity of the Ganges that of Argyre. According to olden writers, the soil of the former consists of gold, that of the latter is of silver and it seems very probable that either the name arises from this fact or the legend derives from the name' (*De situ orbis*, book III, chapter 70, Romer 1998: 121-122).

Geography

While the information given by Pomponius is very limited, his work influenced his successors, and was quoted by famous Roman scholar Pliny the Elder [Gaius Plinius Secundus]. Claudius Ptolemy [Greek: $K\lambda\alpha\delta\delta\iotao\varsigma \Pi\tau\sigma\lambda\epsilon\mu\alpha\tilde{\imath}o\varsigma$, Latin: Claudius Ptolemaeus] was a Greco-Roman mathematician, geographer and

astronomer living in Alexandria, in the Roman Province of Egypt in the second century AD (*c.* AD 90-168). As one of the greatest scientists of his time, he covered a wide range of natural sciences. One book that should be crucial for archaeologists dealing with problems in any part of Eurasia is his *Geography* [$\Gamma \epsilon \omega \gamma \rho \alpha \varphi \iota \kappa \eta$ 'Y $\varphi \eta \gamma \eta \sigma \iota \varsigma$, *Geographike Hyphegesis*]. This volume is a compilation of all Roman geographical knowledge from the second century AD (Berggren and Jones 2001) (Figures 2 and 3). $\Gamma \epsilon \omega \gamma \rho \alpha \varphi \iota \kappa \eta$ 'Y $\varphi \eta \gamma \eta \sigma \iota \varsigma$ is the work of a mature scholar, who accurately describes his research methods, discussing the topic of the theory of geography, referring to the coordinate system (longitudes and latitudes) proposed by Marinus of Tyre [Mapívoς o Túpιος]. The second part of the book contains geographical information about all known *oikoumene* [Greek: *oiκουμένη*], that is the inhabited world known to Graeco-Romans. At the margins of the *oikoumene* were, in the west, Maκάρων Nήσοι [Makárōn Nḗsoi, Fortunate Isles, probably the Canaries Islands or Cape Verde Islands], and in the east, central China. Unfortunately, the original



Figure 2. A detailed map of Southeast Asia based on Ptolemy's Geography (Chrysoloras and Angelus. 15th century. The British Library Harley Manuscript 7182; from Wikimedia Commons).



Figure 3. A world map dated to c. AD 1300, based on Ptolemy's Geography (Fischer and de Cavalieri 1932; from Wikimedia Commons).

book and maps did not survive to our times and our knowledge of this work is based on late medieval and renaissance copies (Milanesi 1996).

Ptolemy also refers to Southeast Asia, giving us supplementary details to the older *Periplus of the Erythraean Sea*. He repeats information about *Chrysé Chersónēsos*, i.e. the Golden Peninsula, which, based on his more precise descriptions, is believed to refer to the Malay Peninsula (Borell *et al.* 2014), and places the port of Kattigara to the east of that (Schoff 1917). Kattigara is located at *Sinus Magna* (The Great Gulf), which probably refers to the Gulf of Thailand. It is noted as a port of trade with *Sine* [China] (Berggren and Jones 2001). The exact geo-referenced location of Kattigara is controversial and several locations have been discussed, including in northern Vietnam and southern China (e.g. Gerini 1909: 303). In our opinion, the most probable location of Kattigara is the archaeological site of Óc Eo in modern An Giang Province of Vietnam. In favor of this theory is the site's location at the Gulf of Thailand (Figure 3), its role as the port of Angkor Borei (Higham 2014: 279), and finally the enormous concentration of artifacts, such as pendants imitating Roman coins, intaglios in Roman style, a cameo depicting a Sasanian official, and a Han period mirror found at the site, confirming its cosmopolitan character (Malleret 1959, 1960; Borell 2014).

Maritime trade

Before the Roman seizure of Ptolemaic Egypt in AD 30, Arab sailors controlled the trade of the Middle East with Asia and Africa (Casson 1989: 11; Mitchiner 1998: 17). It seems that Ptolemaic traders were satisfied with having Arab intermediaries, although Strabo ($\Sigma\tau\rho\alpha\beta\omega\nu$ Strabon) mentioned that in 116

BC Eudoxus of Cyzikus (Εὔδοξος Κυζικενό) had reached the Indian shore (Γεωγραφικά book II chapter 3; Hamilton and Falconer 1903: 149). This situation changed with Roman rule. The Romans were interested in direct trade with the East, although not done by the hands of merchants and navigators from Italia itself, but by the Greeks who lived in Egypt. Significantly, both the author of the *periplus* and Claudius Ptolemy were of Greek origin. During Roman rule commerce with Asia significantly increased. Strabo (Γεωγραφικά book II chapter 5; Hamilton and Falconer 1903: 178) stated that 120 ships a year were involved. This enterprise was not stimulated by the emperor or the Roman administration, but the goods were subject to duty (e.g. see Rathbone 1993). As only vessels of a certain size could survive the challenge of navigation through the open waters of the Indian Ocean, private operators must have had correspondingly high means (Casson 1989: 39). To navigate through the Indian Ocean ancient sailors took advantage of the monsoon winds, known to the Romans as *Hippalos* winds (Chattopadhyaya 1980: 1), so usually they departed the Egyptian ports of the Red Sea coast in July and began the return journey in December or January. The periplus says that the ports of the Indian coast were also centers of the Chinese silk trade, passing either overland through the Tarim Basin and mountain passes at the modern China-Pakistan border, or by the maritime Silk Road via the South China Sea and Bay of Bengal (Casson 1989).

From the Indian subcontinent some Roman goods travelled eastwards, most probably with Indian traders (Hall 1985: 27; Chakravarti 2001; O'Reilly 2007: 97). Indian and Southeast Asian navigators also took advantage of the monsoon to sail across the Bay of Bengal (Hall 1992: 186). Hall (1985: 20) points out that the nature of monsoon winds meant that the direct journey from the Middle East to Southeast Asia worked in favor of the Indian middlemen. Indian merchants were attracted by the exotic goods of Suvarnabhumi, a new market, and access via the Mekong Delta to southern Chinese ports. This exchange is visible in the archaeological record, as artifacts such as intaglios and fragments of glass vessels of Mediterranean provenience are known from continental Southeast Asia (Bellina and Glover 2004: 71; Bellina *et al.* 2014). Another group of objects connected with the Mediterranean constitute locally-produced pendants imitating the design of Roman coins (Borell 2014). As is common for the trade networks known as the Silk Road, not only goods but also ideas travelled, so this interaction also influenced cultural changes in early Southeast Asia (Hall 1985: 1).

Conclusions

As Chersonese and Kattigara were on the margins of Greco-Roman *oikoumene*, mentions of them are very rare and short in the ancient texts, but the Romans were clearly aware of land east of India and south of China. The very important written sources discussed above confirm that the Mediterranean world was involved in Southeast Asia, even though it was Indian middleman who were mainly trading. The concept of the Silk Roads makes the ancient world much 'smaller' than scholars in the early twentieth century thought. The works of ancient geographers were not lost, but reproduced in Medieval and Renaissance works, which influenced later European explorers (Suarez 1999: 83). The synthesis that we have presented indicates the global interconnection of the ancient world at the dawn of our era and suggests that cultural processes in different regions of Asia have trans-regional implications. The written accounts support our understating of what fuelled the tightening of long distance trade contacts in early Asia and Europe and contribute to the holistic understating of those remote cultures.

Acknowledgements

The authors would like to thank Miriam Stark, Sławomir Sprawski, Agnieszka Fulińska, Hui-Lin Lee and Noel Hidalgo Tan for their support and assistance.

Cowries in southwestern China, and trade with India and Myanmar in ancient and modern times

Xiao Minghua

Introduction

In the Account of the Southwestern Yi People of Shiji (The Records of the Grand Historian by Sima Qian, no date), it is recorded that 'down to the first year of Yuanshou Era (122 BCE), Zhang Qian, the Marquis of Bowang, was dispatched as an envoy to Daxia (Bactria). He reported that in Daxia, he saw bamboo canes from Qiong (nearby present-day Xichang) and cloth made in Shu (prefecture in southwestern China, mostly present-day Sichuan). When he asked the people how they had gotten such articles, they replied, 'from the markets of Shendu (India) several thousand *li* to the southeast from here, where the merchants from Shu are peddling them. While someone heard that there is a Shendu State two thousand *li* to the west of Qiong' (Yang and Hao 1997: 302). In *Hanshu* (The Book of Han) by Ban Gu (no date), the same content can also be seen. The facts mentioned in these historic sources took place in the Han Dynasty, but they reflect that before the Han Dynasty a trading route existed from Shu to Shendu (India) via Yunnan. Other trade routes for cowries have been discussed elsewhere (e.g. Peng and Zhu 1995), but here only the 'Shu-Shendu Route' will be mentioned. This started from Sanxingdui in present-day Sichuan, via Xichang in Sichuan, Kunming, Dali, Baoshan and Tengchong in Yunnan, and entered present-day Myanmar and India. Even today, archaeological discoveries and modern trading and communication activities still coexist along this route, and this trading path still plays an active role as an exchange corridor (Figure 1).

Cowries archaeologically unearthed in southwestern China

Cowries archaeologically unearthed in Southwestern China mainly belonged to three periods: the Shang and Zhou Dynasties, the Spring-and-Autumn Period to the Han Dynasties, and the Tang to Song Dynasties.

No.	Container	Quantity	Sum	Date (dynasty)	
K1-3	bronze head statue	16	140	Late Shang to Early Zhou	
K1-6	bronze head statue	20			
K1-11	bronze head statue	42			
K1-258	dragon-tiger Zun-vessel	62			
K2-129	bronze Zun-vessel	935			
K2-146	bronze Zun-vessel	602	4510		
K2-103	bronze <i>Lei</i> -wine vessel	1488	4518		
K2	n/a	1493			
Total		4658			

Table 1. Cowries unearthed from the sacrificial pits at the Sanxingdui Site (K1: Sacrificial Pit No. 1; K2: Sacrificial Pit No. 2).Tabulated by Xiao Minghua.



Figure 1. The distribution of cowries unearthed in southwestern China. Map: Xiao Minghua.

Cowries of the Shang and Zhou Dynasties (sixteenth to seventeenth centuries BCE)

The only site of the Shang and Zhou Dynasties which has yielded cowries to date is the Sanxingdui site in Guanghan, Sichuan. In the Sanxingdui site on the bank of the Yazi River in Guanghan City, two sacrificial pits were excavated, from which 4658 cowries were unearthed (Table 1). Of them, 78 were stored in three bronze head statues (Figure 2), 3087 were stored in three *zun*-vessels and one *lei*-wine vessel, and the remaining 1493 cowries were scattered in one pit. The cowries were identified as ring cowry (*Monetaria annulus*), money cowry (*Monetaria moneta*) and tiger cowry (*Cypraea tigris*); most were ring cowries. They were dated to the tenth-eleventh centuries BCE, or the late Shang to the early Zhou Dynasties (Sichuan Provincial Institute of Cultural Relics and Archaeology 1999), making them the earliest artificially-used and stored cowries in southwestern China known to date (see also Duan Yu this volume).

EURASEAA14: ANCIENT AND LIVING TRADITIONS



Cowries of the Spring-and-Autumn Period to the Western and Eastern Han Dynasties (seventh century BCE to second century CE)

More sites of this period have yielded cowries, in locations distributed along almost the entire route of the Southern Silk Road. For instance, two seasons of excavations at the stone cist burials at Chengguan Town, Maowen County, Sichuan, recovered forty-six cist burials. From twenty-seven of the Group 2 burials 260 cowries were unearthed, with the fewest from a single tomb numbering five and the most forty-three. Each cowry had a hole at one end and was strung with other cowries and put on the chest of the tomb occupant. The dates of these burials were confirmed as between 475 BCE and 25 CE, or from the early Warring-States Period to the end of the Western Han Dynasty (Zhao 1983).

The cist burials at Laochang Village, Baoxing County, Sichuan, produced 108 cist burials over two seasons of excavation, six of which yielded cowries. Among them, M1 yielded twenty cowries, all of which had the top of their backs removed and were strung together. M33 yielded two cowries, M55 yielded one, and the numbers of cowries unearthed from M19, M40 and M98 were not reported. These burials were dated as between 25-220 CE, or the Eastern Han Dynasty (Yang 1983; Sichuan Provincial Commission for the Preservation of Ancient Monuments 1987).



bottom right; photos: Jiang Zhilong).

149

(M1) (bottom center, photo: Xingyi); backs and abdomens of ring cowries (M71) (top and

The Hanta Hill cemetery, Baoxing County, Sichuan, comprises earthen shaft pit tombs with cairns on the ground, sixty-five of which have been excavated. Among them, only one – M24 – yielded one cowry and a string of coral beads (twenty-four pieces in total). The back top of the cowry was removed (Sichuan Provincial Commission for the Preservation of Ancient Monuments 1999). Eight tombs in the Xiala cist burial cemetery, Yajiang County, Sichuan, were excavated, of which burial M4 yielded one intact ring cowry with a hole at one end (Garzê Tibetan Autonomous Prefectural Cultural Center 1983). The tombs at both sites were dated to around the third-second centuries BCE, or the middle-late Warring-States Period.

In the Waxigou cist burial cemetery, Baoxing County, Sichuan, seven burials were excavated, with one – M1 – yielding forty cowries, thirty of which were intact, and a crimson color was painted on their backs. These burials were dated to around the second to first centuries BCE, or the Western Han Dynasty (Baoxing County Cultural Center 1982). The cist burial cemetery at Kasha Lake, Luhuo County, Sichuan, saw 275 tombs excavated, six of which yielded thirty-seven cowries; among them M26 yielded twenty-one cowries, M14 eleven, M62 two, and M11, M64 and M182 yielded one each. All the cowries were preserved intact, and the dates of the tombs were around the seventh to second centuries BCE, or the Spring-and-Autumn through the Warring-States Periods (Sichuan Provincial Institute of Cultural Relics and Archaeology and Ganzi Wenguansuo 1991).

Five seasons of excavation at the royal and aristocratic cemetery of the Dian Kingdom at Shizhaishan, Jinning, Yunnan, recovered eighty-six tombs, seventeen of which yielded cowries; these cowries were stored in fifty-two containers (Table 2 and Figure 3). In M13, not only seven bronze cowry containers full of cowries but also three bronze *banliang* coins were unearthed. In M6, a gold seal with a snake-shaped knob and the inscription of 'The Seal of Dian King' in seal script was unearthed, showing that this cemetery belonged to royal and noble families, which accords with the record in the *Account of the Southwestern Yi People of Shiji* (Sima Qian no date). The dates of the tombs were from 475 BCE to 25 CE, or the Warring-States Period through the Western Han Dynasty (Yunnan Provincial Museum 1956, 1959a, 1959b, 1963; Yunnan Provincial Institute of Cultural Relics and Archaeology 1998, 2009b).

Two seasons of excavations at Lijiashan Cemetery, Jiangchuan, Yunnan, recovered eighty-eight tombs of the ancient Dian people, seventeen of which yielded cowries; among these, seventeen containers full of cowries were unearthed. Five of these tombs did not yield containers; instead, the cowries were put in the northwestern corner of the grave or in the base of the grave (Table 3; Figure 4). The most typical

No. of cowries by container						Bronze	Notes
Drum	Drum-shaped shell money container	Piled drum	Bucket-shaped shell money container	Basin-shaped shell money container	Grave	Cowries	Quantities of cowries / container and total no. of cowries are not noted
22	2	2	25	1	n/a	0	in the original report

Table 2. Cowries unearthed from seventeen tombs at Shizhaishan Cemetery, Jinning, Yunnan (Warring-States to Western Han Dynasties). Tabulated by Xiao Minghua.

Table 3. Cowries unearthed from seventeen tombs at Lijiashan Cemetery, Jiangchuan, Yunnan (Spring-and-Autumn Period to Western Han). Tabulated by Xiao Minghua.

Containers						Bronze	Notes
Drum	Drum-shaped shell money container	Piled drum	Bucket-shaped shell money container	Basin-shaped shell money container	Grave	Cowries	The containers were full of cowries; some cowries were stored
2	3	1	9	0	Yes	40	in the grave and some were put on the bottom of the cases



Figure 4. Bronze shell money containers and cowries unearthed at Lijiashan tombs in Yunnan. (Yunnan Provincial Institute of Cultural Relics and Archaeology 2007, color pictures 100,103, 97-1, 98, and photos by Xiao Minghua). Left to right: top row: piled drum-shaped bronze shell money container full of cowries (M69: 163); bucket-shaped bronze shell money container full of cowries (M69: 139); drum-shaped bronze shell money container full of cowries (M68: 287); bottom row: drum-shaped bronze shell money container full of cowries (M69: 157); backs of ring cowries; abdomens of ring cowries.

case was M68, which yielded not only a drum-shaped bronze cowry container full of cowries, but also fifty-four bronze *wuzhu* coins and sixteen bronze cowries. In addition, M51 yielded a bucket-shaped bronze cowry container full of cowries, including twenty-four bronze ones. The dates of these tombs were established to be the fifth to first centuries BCE, or from the Spring-and-Autumn Period to the Western Han Dynasty (Yunnan Provincial Museum 1975; Yunnan Provincial Institute of Cultural Relics and Archaeology 2001a, 2007).

The Tianzimiao cemetery in Chenggong County, Yunnan, was located on the east bank of Lake Dian. Three terms of excavations at this cemetery recovered 62 tombs; only one – M41 – yielded cowries; 1500 cowries were stored in two bucket-shaped cowry containers, while an empty cowry container was also unearthed from this tomb (Figure 5). The date of this tomb was confirmed as the third century BCE, or the mid Warring-States Period (Archaeological Team of the Provincial Museum of Yunnan 1983; Commission for the Preservation of Ancient Monuments, Municipality of Kunming 1985, 1994).

At the Aofengshan cemetery in Jianchuan, Yunnan, 217 tombs were excavated, three of which yielded forty-seven cowries. Among these cowries, one was intact, and forty-four had their back tops removed; all were found near the skulls of the tomb occupants, showing that they were used as ornaments. The dates of the tombs and the grave goods were confirmed as around the fourth to second centuries BCE,





Figure 5. Bronze shell money containers, ash urns and cowries unearthed in Yunnan. Top left to right: bronze bucket-shaped shellmoney container full of 600 cowries unearthed at Tianzimiao Cemetery in Chenggong County (M41:100) (Commission for the Preservation of Ancient Monuments, Municipality of Kunming 1985: fig. 16:4); bronze bucket-shaped shell money container full of 900 cowries unearthed at Tianzimiao Cemetery in Chenggong County (M41:101) (ibid.: fig. 16.3); ash urn and (bottom) cowries found within unearthed at Dafengle cremation burial cemetery in Dali City (M369: 1 and 2) (Yunnan Provincial Institute of Cultural Relics and Archaeology 2002, plate 29-4 and color picture 30).

or the Warring-States Period (Yunnan Provincial Institute of Cultural Relics and Archaeology 1990). Twenty-three of the cist tombs at Nagu Village in Deqin County, Yunnan, have been excavated, with only one (M5) yielding one cowry with the back top removed. The date of this tomb was around the seventh to fifth centuries BCE, or the Spring-and-Autumn Period (Yunnan Provincial Museum 1983).

Forty-three of the cist tombs at Kexiang Village, Zhongdian County, Yunnan, have been excavated, and one (M5) yielded seven cowries, the back tops of which were all removed. Radiocarbon dating of human skeletons at Budu Village found tomb M2 dated to 1008-833 BCE and M6 to 986-813 BCE, or the Western Zhou Dynasty; the M6 date may also relate to M5 (Yunnan Provincial Institute of Cultural Relics and Archaeology 2005). In addition, the tombs of this period at Wadaluo, Puge County, tomb No. 1 of the Han Dynasty at Taoping Village, Hanyuan County, and the cist tombs at Maojiaba, Yanyuan County, among others have also yielded cowries. The archaeologically unearthed cowries of this period are mainly ring cowries with a few money cowries (*Monetaria moneta*); tiger cowries were very rare - only two of them have been found to date.

The cowries of the Tang to Song Dynasties (sixth to twelfth century CE) and later times (Yuan, Ming and Qing)

The cremation burials at Batatai, Qujing, Yunnan were superimposed over strata from the Warring-States to the Han Dynasty. Two mounds have been excavated to date, with 304 cremation tombs on Mound No. 2 recovered. Among these tombs, ninety yielded cowries (571 in total); an additional three tombs yielded cowries, but their amounts were unclear. M144 yielded not only seven cowries but a Xining Zhongbao 熙宁重宝 (issued 1068-1077 CE) bronze coin of the Northern Song Dynasty. These cremation burials were dated to the twelfth to sixteenth centuries, or the Yuan and Ming Dynasties (Wang Dadao 1998; Yunnan Provincial Institute of Cultural Relics and Archaeology 2003).

At the cremation burial cemetery at Dafengle Village, west of Fengyi Town, Dali City, Yunnan, 966 cremation tombs have been excavated, seven of which yielded 129 cowries in total; in addition, six other tombs contained cowries, but their amounts were unclear. M369 yielded not only cowries but six *Hongzhi Tongbao* 弘治通宝 (issued 1488-1505 CE) bronze coins of the Ming Dynasty. All the cowries unearthed from this cemetery were intact. The cemetery dates to around the thirteenth-sixteenth centuries, or the Ming Dynasty (Figure 5; Yunnan Provincial Institute of Cultural Relics and Archaeology 2002).

At the cremation burial cemetery at Heshangta, Luxi County, Yunnan, 201 tombs have been excavated, forty-two of which yielded 340 cowries; in addition, fifty-one tombs yielded cowries, but their amounts were unclear. M021 yielded four cowries and two *Sheng Song Yuanbao* 圣宋元宝 (issued 1101-1027 CE) bronze coins of the Northern Song Dynasty. M035 yielded six cowries and one *Hongzhi Tongbao* bronze coin. M039 yielded not only cowries but a *Yuanyou Tongbao* 元祐通宝 (issued 1086-1094 CE) bronze coin of the Northern Song Dynasty. The burials accompanied by cowries and their grave goods were dated as from the thirteenth to sixteenth centuries, or the Yuan and Ming Dynasties; the later tombs contain early objects (Yunnan Provincial Institute of Cultural Relics and Archaeology 2001b). At Xiangmianshan in Heqing County, Yunnan, 2367 tombs have been excavated, 479 of which yielded cowries (20.24% of all the excavated tombs). These tombs have been dated to the thirteenth to seventeenth centuries, or the Ming and early Qing Dynasties (Yunnan Provincial Institute of Cultural Relics and Archaeology 2009a).

The archaeological data mentioned above show that cowries scientifically unearthed in southwestern China were mainly dated to three periods: the Shang and Zhou Dynasties, the Warring-States Period through the Qin and Han Dynasties, and the Song, Yuan and Ming Dynasties. Their distribution areas are mainly in the ancient Shu State, the area of the Southwestern Yi people, and the territories of the Kingdoms of Nanzhao and Dali. The cowries found are ring cowry, money cowry and tiger cowry.

Ring cowries and money cowries are mollusks belonging to the Megagastropoda (Cypraeidae, *Monetaria* genus), which includes many species (Linnaeus 1758; e.g. see Burgess 1985). The formal name of ring cowry is *Monetaria annulus* (the old name was *Cypraea annulus*, L.). The formal name of money cowry is *Cypraea moneta* or *Monetaria moneta* (L.). Both of these types of cowries are small in size: the shell is normally 27 millimeters long, 20 wide and 13.5 thick. The shell texture is strong, and its shape is roughly oval, with a raised back and low and flat sides. Near the rear end of the shell, about the one third along the full length, the shell suddenly swells into a nodule. The entire shell is covered with glossy enamel. The colors of ring cowry shells include fresh yellow and yellowish-white. The color near the shell opening is white. The opening is long and narrow, each side of which bears twelve or so serrations (Figure 6).



Figure 6. Modern cowries, left to right: a) the backs of ring cowries (top row) and money cowries (bottom row); b) the abdomens of ring cowries (top row) and money cowries (bottom row); c) tiger cowries. Photos: Xiao Minghua

Tiger cowry, which is also known as 'black star treasure shell', gets its name from the black mottles like those of jaguars that occur on the shining shell. Its formal name is *Cypraea tigris* (L.). Its shell is large and heavy; the back is round and raised, the bottom is flat or somewhat concave. The base color of the shell is white and the patterns on the back are distributed in two layers: the bottom is a bluish-grey color and the top layer is light red and dark brown. The double-layer arrangement makes the pattern a little crowded; the mottles of the top layer are usually surrounded by an orange color. Tiger cowries are usually between three to nine centimeters in length (Figure 6).

The three kinds of cowries all live in tropical marine environments, distributed in the tropical zones of the Pacific and Indian Oceans, including the coastal areas of Taiwan, Guangdong, Hainan, and the Xisha (Paracel) and Nansha (Spratly) Islands.



The status quo of cowry use of modern ethnic groups living along the route of the Southern Silk Road

Modern ethnic groups living along the old trade route (twelfth century BCE to second century CE) from Shu to India include the Han and Yi people, the Bais, the Lisus (Yawyin people), the Jings (Jingpo people), and the Dais. Among these, the Jings and Lisus are still using cowries today.

The Jings and Lisus use cowries in three ways: they are stitched along the lower fringes of women's skirts, sewn to waist belts, and used to make hair ornaments. As narrated by the sewers, originally the cowries were used as money, but because they were very small and easy to lose, a Lisu wife sewed them onto a white cloth belt and let her husband wear this belt. When the husband was involved in a fight, the cowries on the belt prevented weapons from harming him, and he defeated his enemies. He was grateful for the cowries, and from then on the custom of wearing bandoleers made of cowries and colorful wool flowers became popular among Lisu men, and the belt developed into an ornament (Figures 7 and 8). In order to sew cowries onto clothes, their back tops must be removed.

Xiong Yucong (Figure 8) from Sudian Lisu Autonomous Township in Yingjiang County, Yunnan, has been in business for more than twenty years selling cowries and making Lisu dresses and ornaments. Her son Yu Shengbao frequently travels to Myanmar to purchase merchandise, including cowries from Mandalay; these cowries there are not local products but are traded into Myanmar by Indian merchants. The Lisus also use cowries as medicine: when cowries are baked, they can be used to treat eye diseases; mixed with lemon juice, they can be used to treat choledocholithiasis (bile duct stones). The cowries used by Xiong Yucong belong to two types: ring cowries and money cowries. Using cowries to make dress ornaments is also seen among the Lisus living in Weixi County (Figure 8).

Cowries in the past and recent times

All of the cowries of the Shang and Zhou Dynasties unearthed to date in southwestern China are ring cowries and money cowries, as are most of the cowries of the Spring-and-Autumn Period through the Han Dynasty unearthed to date, with only two tiger cowries. Cowries of the Tang and Song Dynasties were mainly ring cowries. In modern times, the cowries traded and used by the Jings and Lisus are



Figure 8 Dresses of the Lisus in Yunnan ornamented with cowries. Headdress of a Lisu woman in Weixi County. Photo: Pia Luxian (left). Full dresses ornamented with cowries of Yu Xingcong and his wife, a Lisu couple in Yingjiang county; cowries and ornaments made of cowries being sold by Xiong Yucong, a Lisu woman in Yingjiang county. Photos: Xiao Minghua (center and right).

ring and money cowries, and they are from India and Myanmar. The historic and contemporary data suggest that the cowries used by ancient people in southwestern China, similarly to those purchased and processed by modern Jings and Lisus, were also transported in from India and Myanmar (also see Duan Yu this volume). The route from Shu *via* Yunnan to Shendu (India) existed before the Han Dynasty and is still in use today. Those doing business symbolized by cowry trading were ancient Shu people in the Shang and Zhou Dynasties, and the Southwestern Yi people in the Spring-and-Autumn Period through the Qin and Han Dynasties. Since the Shang and Zhou Dynasties down to the present, trade and communications via this path, as represented by cowries, have never been interrupted. Today this trade route has been given the honorable name of the 'Southern Silk Road'.

Acknowledgments

I am grateful for the comments of an anonymous referee.

The source of the seashells and ivories found in southwest China in the pre-Qin Period

Duan Yu

Research on historical documents both in China and abroad reveals that before the Qin Dynasty (221-206 BC) there were commercial activities running across southwest China, Myanmar, India and Middle Asia. Studies of recently-found archaeological materials confirm the existence of communication lines between southwest China, Southeast Asia and India in the Shang-Zhou Dynasties (1600-221 BC), with evidence that trade in merchandise used seashells as a medium of exchange. A large number of seashells found on archaeological sites in Sichuan and Yunnan Provinces, and of ivories at the Sanxingdui (c. 1700-1000 BC) and Jinsha (c. 1200-250 BC) sites, are not native to southwest China, but came from India and Southeast Asia. This means that at least from the second half of the second millennium BC, transportation and trade between these areas were developed, and seashells were already in use by this early date as a medium of exchange (Duan Yu 1991: 2).

The source of the seashells and ivories found in the Shang Dynasty

In the summer of 1986, a great quantity of gold and jade articles, seashells, ivories, and groups of figurines, animals and plants sculpted in bronze, were unearthed in the Nos 1 and 2 sacrificial pits at the Sanxingdui site in Guanghan, Sichuan (e.g. Sichuan Provincial Institute of Cultural Relics and Archaeology 1999). Among the seashells excavated at Sanxingdui was a kind of cowrie shell, *Monetaria annulus* (the ring cowrie or gold ringer, *Huan Wen Huo Bei*), which is also called Zi (*Zi An Bei*) by Japanese scholars. It is about one third the size of the *Hu Ban* shells found in Yunnan Province. This kind of *Monetaria annulus* is only produced in the depths of the Indian Ocean (Xiong Yongzhong 1988: 5; Wang Dadao 1988), and is not found in coastal waters, rivers or lakes. Such a great number of seashells found in Sanxingdui, which is located in an inland basin, must have been imported from the northern area of the Indian Ocean (the area between the Gulf of Bangladesh and the Arabian Sea).

There are many references to shells in Chinese historical documents, for example in Yi Zhou Shu (e.g. Sturgeon 2019) and Wang Hui Pian, and there are accounts that Chu abounded with shells in documents such as Zuo Zhuan (e.g. Hi Zhihui and Chen Kejiong 1996). Although these documents record that the Yangtze Valley and Huai River areas were rich in shells, these may refer to freshwater mussels rather than seashells. Chinese ancient books do record that the main area near the South China Sea produced shells, but the word 'produce' should be analyzed carefully. The places of seashell production mentioned in oracle bone inscriptions and historical documents do not refer to the places producing shells, but the places from which seashells were imported and then transferred to the Central Plains. While a great number of seashells were imported, many Chinese historical records take Guangzhou as a place of seashell 'production', but it was mainly a collection and distribution center. The Arabs in the ninth to tenth century CE recorded that Guangzhou was the place of importation for shells (Mu Genlai et al. 1983: 15). These shells were imported from islands, or countries and areas along the sea. The Chinese historical records can thus be misleading. Another example of this is the way in which ancient China regarded areas around the country as dependent states, and their products were generally regarded as being produced in China. For example, the term 'Jiao Guang' included Jiaozhi (today's North Korea) within China's Guangzhou. The statement that seashells were produced in 'Jiao Guang' blurs these boundaries, as well as the difference between the place of origin and the place of collection and distribution.

There was a tradition of using seashells as currency in the northern areas of the Indian Ocean, as recorded in the historical literature. For example, *Tong Dian volume* 93 *Tian Zhu* [通典卷93天竺] recorded

that: 'Xi, Qin and An Xi communicated by ocean, or communicated in Fu Nan and Jiao Zhi...They often used seashells as currency', and the *Old Book of Tang Chuan•Tianzhu* recorded that India used seashells as currency. Wang Dayuan (e.g. 1981) of the Yuan dynasty (in *Daoyi Zhilüe* 島夷志略), discussed exchange rates between shells and silver pieces, with reference to places such as today's Bangladesh, 'Lavo', Siam, 'Da Wu Die', and 'Fang Bai', where they used seashells as money. We cannot know the accurate locations of some of these places, but all are in the Indian Ocean region (e.g. Zhao Lüfu 1985: 323-324). The Maldives also used seashells as money. Gongzhen in the Ming Dynasty recorded that seashells were piled up on beaches for this purpose, with the empty shells themselves being sold to Siam, 'Bang Ge La and other countries' (*Yingya Shenglan 瀛涯勝*覽 by Ma Huan 馬歡; e.g. Zhen Gong and Da Xiang 1961; Mills 1970 (1997)).

Harvey and Temple (2008) cite a Persian traveller in 851 CE in Myanmar, who recorded that cowries were used as currency there. East India, Bangladesh and Myanmar are said to have abounded with 'toothed' shells, and to have produced jade, ivories, candles, amber, jasper, jewels and velvet (e.g. Fan Chuo 樊綽 recorded in *Man Shu* 蠻書 fasc. 10 (e.g. Oey 1961); Wu Chengzhi 吳承志 (e.g. 1968) in *Tang Jia Dan Ji Bianzhou Ru Siyi Daoli Kaoshi* 唐賈耽記邊州入四夷道里考實 fasc. 4; Wu Chengzhi in *Ming Yitong Zhi* 明一統志, *Miandian-guo Zhi* 緬甸國志). The exact locations of the places mentioned in these sources are debatable, but they are all somewhere in or between eastern India and Myanmar (e.g. Tian Zhu Zhuan Vols 4, 6 in *Tong Dian, Bie Lu*, Vols 4 and 6 in *Ben Cao Gang Mu, Tai Pin Yu Lan, Biao Guo Kao* by Chen Xujing; Zhao Lüfu 1985: 323-324).

White seashells originating in India are found in Sanxingdui in Guanghan, Sichuan, and at many other places in southwest China. For example, seashells were excavated in three early period graves at Aofeng Mountain, Jianchuan, Dali, Yunnan Province, where forty-three shells were excavated in M81, one in M155 and three in M159. The three tombs were dated by radiocarbon (with tree-ring correction) to 2450 ± 90 years, around the middle of the Spring and Autumn Period to the early Zhan Guo Period (Yunnan Provincial Institute of Cultural Relics and Archaeology 1990). Excavations in 1979-1980 by the Kunming Heritage Management Committee of Tomb No. 41 at the Son of Heaven Temple site in Chenggong, found 1500 seashells (Commission for the Preservation of Ancient Monuments, Municipality of Kunming 1985). The Yunnan Provincial Museum's excavations of the tombs of Jinning Shizhaishan (late Zhan Guo to middle Western Han Dynasty), found seventeen tombs with seashells, and a total of 149,000 shells (Yunnan Provincial Museum 1959a and b).

In Sichuan, the earliest discovery of sea products is in the Da Qi relics of Wushan, but their origins are unclear. Seashells and freshwater mussels were also found in a sarcophagus in Mao County in the upper reaches of the Minjiang River (Sichuan Province Heritage Management Committee 1981). Seashells were found in cremation graves in Dali, Chuxiong, Lufeng, Kunming and Qujing in Yunnan Province, and Xichang in Liangshan Prefecture in Sichuan Province (Yunnan Provincial Museum 1981; Sichuan Provincial Museum 1981). All may have been imported along ancient communication routes connecting southwest China and India. The distribution of cowries in Southwest China is discussed in regard to trade by Xiao Minghua (2006, and see in this volume).

However, the oldest of the seashells unearthed at Sanxingdui date to the Spring and Autumn Period, while Sanxingdui belongs to the Middle and Late Shang Dynasty, more than 1000 years earlier than the other sites. No seashells from the thousand years from Shang, Xizhou to the Spring and Autumn Period have yet been discovered. The seashells of Sanxingdui are thought to be the result of direct cultural and economic communication between people of ancient *Shu* and India, not being found at places in the middle, but only at the final destination. In a similar way, other cultural elements such as bone sculptures and gold scepters were transmitted to ancient *Shu* from the Indian subcontinent without leaving any trace in Yunnan. Instead, they arrived in the Chengdu Plain directly.

The backs of most of the seashells (cowries) excavated in Sanxingdui were ground flat in order to connect them together. This is similar to seashells excavated in Yunnan over the years. Some of the seashells of Sanxingdui were discovered at the bottom of sacrificial pits, and others in bronze wine vessels. This is consistent with a Bronze Age phenomenon in Dianchi, Yunnan Province, where shells used as currency were contained in bronze shell containers (e.g. Xiao Minghua 2008, and this volume). During the Han-Jin, Nanzhao and Dali Periods, and the Yuan, Ming and Qing Dynasties, in Yunnan Province people involved in commercial activity used shells as currency, for example for trade with 'Jin silk', a roll of which was recorded as costing sixteen seashells (*Xin Tang Shu-Nan Zhao Zhuan*; e.g. Fo Guang Shan 2013-2019). In *The Travels of Marco Polo* (Polo (1350) 2005) white shells were recorded as being used for currency in Kunming, and in Dali people also used white shells as currency, presumably transmitted from India; these are the same as the 'toothed' shells discussed above (see also Fang Guoyu 1957: 12; Peng Xinwei 1958; Zhang Zengqi 1982: 2). These seashells were also used in China in commodity transactions between the people of ancient *Shu* (Duan Yu 1999: 395-409), and when the ancient *Shu* kingdom imported bronze from Yunnan (Jin Zhengyao 1995: 2); seashells were thus also important in economic communications between ancient *Shu* and the Central Plains and Yunnan (Li Jiarui 1956).

The source of the ivories found in Chengdu Plain in the Shang Dynasty

Ivory was also a traded commodity. Thirteen ivories were excavated from sacrificing pit No. 1 in Sanxingdui, and more than sixty were discovered lying crisscross in the upper stratum of pit No. 2. In pit No. 1, there was a heap of large animal bones, possibly of elephants, which had been smashed and burnt (e.g. Sichuan Provincial Institute of Cultural Relics and Archaeology 1999). Among the bronze articles of Sanxingdui, the largest and the most authoritative bronze is the figure of the highest ruler of ancient *Shu*. The middle part of the bronze foundation on which the figure is set is formed by four elephant heads. The weight of the ivories excavated in Jinsha Reserve, where these sites are, is over one ton (e.g. Chengdu Institute of Cultural Heritage and Archaeology 2006).

According to relevant historical documents, there have always been elephants in south China (*Guo Yu Chu; Shan Hai Jing-Hai Nei Nan Jing; Shan Hai Jing-Zhong Shan Jing; Shi Jung-Nu Song Ban Shui*). For instance, *Zuo Zhuan* recorded ivories in Chu, and *Shang Shu-Yu Gong* recorded that Jing Zhou and Yang Zhou had ivories (e.g. Sturgeon 2019). These documented production mostly south of the Yangtze River, and some scholars think they refer to the Ba and *Shu* areas, and thus that *Shu* had elephants. *Guo Yu-Chu Yu* recorded that Ba Pu had rhinoceroses, yaks, *si*, and elephants, and Wei Zhao noted that elephants came from Ba, while the other animals noted came from the borderlands of Jing and Ba. Ba Pu is the name of a place, but where is it? There is a history of places called Ba and He Pu, but there is a large distance between them. Ba is located on the east side of the Jialin River. The establishment of the county of Ba occurred in the later Warring States Period, when Ba was defeated by Qin, and the inclusion of He Pu into the territory of Han occurred under Emperor Han Wu Yuanding in 111 BC. How could Chu Ling Wang know the place names Ba and He Pu in 529 BC?

Wei Zhao said that elephants were from the other side of the frontier. This means that there were no elephants in the county of Ba, let alone in *Shu*. But according to the records noted above, Jin and Yang produced ivories and Chu abounded in ivories. Ba Pu probably referred to the southern area of Jin province, which was adjacent to ancient Jin Zhou (Chu Ling Wang). *Shan Hai Jing-Zhong Shan Jing* (e.g. Sturgeon 2019) mentions that there were many elephants at Min Shan, which referred to the upper reaches of the Min River (*Han Shu-Dili Zhi*). However, archaeological materials do not reveal any traces of elephants in this area, although there is evidence of rhinoceros (Liu Lin 1984: 179). Min Shan is a dry area among mountains and valleys, which were not suitable for elephants. As for the saying that the snakes of Ba devoured elephants (*Shan Hai Jing, Hai Nei Nan Jing, Li Sao, Hain Nan* Zi; Duan Yu 2006: 6), Ba refers to the ancient province of Jing Zhou, rather than Ba *Shu*. The statement that there were

elephants living on the Chengdu Plain in ancient times is short of evidence. The ivories excavated in Sanxingdui and Jinsha are possibly not the ivories of elephants living there. There is no reason to assume a relationship between the places where ivories or ivory articles are found and the places where elephants live(d), just as findspots of bronze articles are not necessarily production locations of bronze materials.

Despite dense forests and grasses, there were a lot of marshes on the Chengdu Plain and its natural and geographical environment was suitable for the existence of elephants (e.g. Elvin 2004). Archaeological evidence shows that although there were varieties of beasts living on the Chengdu Plain from prehistory to the Shang-Zhou period, no remains of elephant have been found in archaeological sites except in Sanxingdui and Jinsha, the sites where ivories were buried together with animal bones. Among the animal skeletons excavated in many archaeological sites, domestic pigs make up a large portion and there are also skeletons of wild pig, deer, sheep, bull, dog and chicken. If elephants did not live in these areas, it is then impossible that local people gave ivories or elephants as tribute to the King of *Shu. Duan Chen Shi, Niu Yang Za Zu* (fasc. 16) recorded: 'Nowadays, Jing produces elephants. The elephants are black and have two teeth. These elephants really are river pigs'. This refers to Jing Nan, almost contiguous with the land of Fujian and Guangdong. The large quantity of ivories excavated at Sanxingdui and Jinsha are probably not from areas like the east of Yue, or the upper reaches of the Min River, and are also unlikely to have come from Min and Yue in the southern area of Jin.

During the Shang Dynasty, north China did abound with elephants. Henan was called Yu Zhou in ancient times, which was related to Fuxiang. According to Lü Shi Chungiu-Gu Yue, at the end of the Shang and beginning of the Zhou dynasties there were numerous elephant herds in the Jiang Huai area, which were later driven to Jiang Nan, and some are said to have been tamed and trained, and were moved from place to place (see also Mencius-Teng Wen Gong Xia; Shang Shu, Yu Gong, Shi Jing, Zuo Zhuan and Dili Zhi (Treatise on Geography) (e.g. Sturgeon 2019), and could have been moved to Jin Nan, Yue and Min. After Han Wu Di established contact with the west, it was recorded that the storehouse was full of various treasures from foreign countries, including elephants, lions and birds, suggesting that elephants were brought from foreign lands. There were elephants in the Yellow River basin, with the character for 'elephant' found in inscriptions on bones and tortoise shells of Yin Xu (e.g. Luo 1912), documents mention ivory and ivory articles, and archaeological excavations have unearthed ivory articles (see Xu Zhong Shu; Guo Moruo 1930 (1964): 179-180). However, at the beginning of the Zhou Dynasty, it is said that Zhou Cheng Wang drove tigers, leopards, rhinoceroses and elephants away, and his action pleased the people. In the Han Dynasty, elephants were regarded as a non-local product and given as tribute to the Chinese government by foreigners. According to Zhu Kezhen (1972: 1), the climate turned cold in the Han Dynasty, and the environment of the Yellow River basin was no longer suitable for elephants.

There is also no evidence that elephant trainers from Yin escaped or emigrated to *Shu. Shang Shu-Shi Mu* recorded that the state of *Shu* took part in King Wu of Zhou's campaign against the Shang Dynasty, and was even rewarded with the title of '*Shu* Hou'. The elephant trainers of Yin would, therefore, never have sought refuge in *Shu*. Oracle bones record that Shang attacked *Shu*, and both Shang and *Shu* were two areas of the Hanzhong region heavily fortified militarily against each other (e.g. Keightley 1978). In such a situation, the Shang Dynasty would not have sent any elephants to *Shu*. In addition, there are no relevant records in Bu Ci and historical documents. The ivories of Sanxingdui did not come from the Shang Dynasty.

Elephants might have originated from the southwestern part of Yunnan, Myanmar and/or India. Records of elephants in Yunnan during the Han-Tang period (third century BC to AD 90) were limited to the border areas of the southwest, the southern area of Ai Lao (Chang Qu's *Hua Yang Guo Zhi-Nan Zhong Zhi*; Fan Zuo *Man Shu*). There are no records of elephants in the east and northeast of Yunnan (the

region of Dian culture) or in the west of Yunnan (the region of Western Dian culture), and there are no finds of dozens of ivories buried together. The ivories found at Sanxingdui and Jinsha appear to have no relationship to these two areas.

According to the discussion above, the skeletal remains of elephants and the ivories at Sanxingdui and Jinsha neither originated on the Chengdu Plain nor from any other ancient cultural area relevant to ancient *Shu*. Historical documents suggest that these early elephants and ivories were from India (Wen Jiang 1980: 2). According to ancient Greek records, India's Nanda Dynasty (362-321 BC) established a large army which included 3,000 elephants, and the subsequent Maurya Dynasty (321-185 BC) had a powerful army with 9,000 war elephants (Thapar 1990: 50; Liu Jian *et al.* 2004: 74). The Chinese documents produced during the period between the Han and Tang dynasties said that India abounded with elephants. In the ruins of the famous city of Mohenjodaro, excavations have revealed that ivory manufacture was once prosperous, there were many ivories waiting to be manufactured. and there were abundant supplies of ivory (e.g. MacKay 1931).

The Southern Silk Road: an international communications in southwest China before the Qin Dynasty

The culture of ancient *Shu* was broadly distributed over the southwestern area of China, bordering Ba to the east and Yue in the south, and next to Qin in the north and E Fan in the west (*Huayang-guo Zhi-Shu Zhi*). A great number of tribes of Pu Yue people were scattered over the southwestern area of *Shu*, which was called Nan Zhong in ancient times (*Historical Records-Account of Dawan*); Nan Zhong included Yi Zhou, Yong Chang and Yue Xi of the Han Dynasty (Meng Wentong 1981: 2-3). In the Shang and Zhou Dynasties, with the influence and promotion of the civilization of ancient *Shu*, with Sanxingdui at its center, the areas along the Silk Road in the south, such as Dian and Qian, produced bronze, social complexity was intensified, and tribes were formed. These changes promoted the development of culture in southwest China. Groups of bronze figures with a standing person at the center are evidence of cultural communication and 'melding' among various ancient tribes under the flag of the civilization of ancient *Shu* (Duan Yu 1991: 2). Because of the strong appeal and cohesive force of ancient *Shu*, the pre-Qin culture of southwest China gradually developed from a dispersed situation into 'civilization', and developed a unity of politics and culture. The influence of ancient *Shu* was carried along the Silk Road in the south.

The Silk Road in the south, which ran across Sichuan, Yunnan and Myanmar, had an important role in the early communication of culture between China and countries to the west, and was important in early Chinese civilization. Before the Spring and Autumn period, the migration of people of various ethnic groups in northwest China was not yet violent, and the large-scale migration of these groups had not occurred. According to Western history, this migration took place in the seventh to eighth centuries BC. At that time, the distribution of nations in eastern Eurasia was generally as follows: the Simeon lived in southern Russia, with Scythians to their east; the Sarcomata lived north of the Caspian Sea, and the Massagetae lived in the Kirghiz grassland to downstream of the Sir Daria River; the Agrippa lived in the western Junggar; the Issedones lived in the east of the Tarim Basin, while the Armistead lived in the He Xi area (Fang Hao 1987: 47-48). During that period, there was estrangement between China and Middle Asia; therefore, there were many difficulties in cultural communication with foreign lands through northwest China and the northern prairies from Zhao Guo to the early days of the Han Dynasty. Since Xiong Nu and Xi Qiang blockaded the He Xi Corridor and northern prairie, respectively, traffic between the northwest and the north was cut off.

Southwest China, however, was a dependency of *Shu*. The king of ancient *Shu* in the Shang and Zhou Dynasties was the highest ruler of the various tribes, controlling the southwest for a long time (*Huayang-guo Zhi*). The strategic route between *Shu* and various tribes went to Afghanistan, then to Middle Asia,

West Asia, and finally to the Mediterranean. When Zhang Qian's expedition returned from the Western Regions, after he reported to Emperor Wu of Han, he said: 'The Xia is twelve thousand *Li* distant from Han, and lies to the southwest of Han. Sindu is located in the southeast of Bactria several thousand *Li*. In Sindu goods from *Shu* are found. Sindu is not far from *Shu*. Qiang do not like Xia. The Huns are located in northern Xia. Sindu is not an enemy to *Shu*, so they go through *Shu* to Xia' (Sima Qian 1973: 3166). This reveals that through his on-the-spot investigation, Zhang Qian knew that it was both distant and also dangerous and difficult because of the differences in nationality that existed, to leave the country from the northwest or the Northern Prairie. The only route which was convenient and safe was to leave China from the southwest to India and then to Middle Asia. Zhang Qian was born in Cheng Gu in Han Zhong, and was a man of *Shu*, familiar with the historical relationship between *Shu* and various tribes of Nan Zhong. Sindu was not the enemy of *Shu*, so it was possible to travel and trade to Xia via *Shu*, and to connect China with foreign lands. By connecting Zhang Qian's observations in Middle Asia with the commercial activities carried out by merchants of *Shu* in the subcontinent and Assam in East India, it is clear that the long-distance trade of silk and the goods of *Shu* by merchants of *Shu* in India and Middle Asia during pre-Qin times and the early days of Han Dynasty must have gone through *Shu* Shu by Dao.

Besides the main Southwest Corridor, the Silk Road in the south included the Hong He route, which ran across Sichuan and Yunnan, and reached Vietnam by way of the Yuan River, and it also included the Zangke route, which ran from Shu to Fan Yu via Ye Lang. The relationship between the southwest and the coastal area of the southeast was developed along those routes. Yi Guo-Wang Hui (fantizi) records that in the early Shang Dynasty, Tang of Shang requested Yi Yin to lobby the Chan Li and Bai Pu tribes in Zheng Nan, located on the south-eastern coast and the South China Sea area. Some implements (yazhang 牙璋) typical of Sanxingdui were excavated at Nanya in Hong Kong (Quetal. 1994) and seashells found in the sacrifice pit at Sanxingdui were from the South Sea. In the Shang Dynasty, Shu carried out cultural communication with areas of Southeast Asia, the South Sea and southwest China through the Hong He and Pan Jian routes, and through Shu, Qian, Gui and the Yue Zang Ke route. From China's south-eastern coastal areas metal implements and other cultural factors gradually entered west Burma and India through southwestern China (Duan Yu 2009: 1). The Silk Road in the south was very important in the early phase of ancient civilization, and it was the communicational tie between ancient East Asia and the European and West Asian regions. As Li Xueqin pointed out (2007: 1-2): 'The importance of Sanxingdui not only lies in the existence of sea shells. It should be placed in the background of the Silk Road in the South for its cultural and historical significance to be profoundly understood. The Silk Road was the thoroughfare connecting China to Southeast Asia and South Asia. Its value and effect should be examined from the perspective of world history. The Yin ruins offer some clues, such as the Wuding tortoise shells excavated from pit YH127 at the Xiaotun site in the 1930s. The biologist Wu Xianwen recognized that the tortoises came from the Malay Peninsula. I selected a tortoise shell from the collection at Cambridge University in the 1980s, and the British Museum found that it was a type from Burma's south. Oracle bones from YH127 had adhered fabric. Taiwanese scholars considered the fabric to be cotton. In addition, *yazhang* ['blades/adzes'] unearthed in northern Vietnam feature decorations that appear closely linked with Sanxingdui'.

Through the Silk Road, the nation and cultures of southwest China communicated with foreign nations and cultures, helping establish relationships at an early date, and leaving an immortal page in the history of China and other countries of Eurasia. Through the Silk Road, China got to know the world and to be known by the world, and so the Silk Road has an important meaning in the history of world civilization.

Acknowledgements

This paper is one of the research results of the Chinese National Social Science Fund major project 'The Southern Silk Road and the Ancient Civilizations of Eurasia'.

Southeast Asia and the development of advanced sail types across the Indian Ocean

Tom Hoogervorst

This paper examines the distribution of Southeast Asian sail types and maritime vocabularies across the wider Indian Ocean. In terms of solid archaeological evidence, very little of the sails used by pre-modern seafarers is known beyond any doubt. By bringing together data and inferences from maritime archaeology, iconography, and, especially, historical linguistics, I offer some interdisciplinary perspectives on the history of sailing technology in this part of the world. I demonstrate that several types of spritsails spread from insular Southeast Asia, where they were invented, to the Southeast Asian mainland, the Indian subcontinent and the western Indian Ocean. This is partly supported by lexical data relating to rigging terminology, which suggests a particularly active role of Malay-speaking sailors in the dispersal of nautical technology. The evolution of the lateen sail in the western Indian Ocean, which superficially resembles Southeast Asian sail types, appears to have been a separate development.

Introduction

Long-distance maritime navigation has shaped the history of the world's oceans, even if the available evidence - consisting chiefly of boat remains and the seaborne displacement of peoples and things - tells us little about the actual nature of pre-modern seafaring (Anderson 2008: 240). Sailing boats were indispensable for populating uninhabited areas, reaching distant communities, and transporting commodities, plants, animals, people and ideas (Whitewright 2015; Anderson 2018). While our understanding of seafaring in the Indian Ocean is gradually improving, several questions remain unanswered. One issue that merits attention is the way maritime communities incorporated sail types and other nautical elements from outsiders into their own traditions. Our knowledge of the pre-modern sailboats of Southeast Asia and the wider Indian Ocean region is largely based on a limited record of shipwrecks, supplemented by depictions of watercraft on objects, in temple reliefs and rock art (cf. Lape et al. 2007; Walker-Vadillo 2015). None of these lines of evidence, however, contain unambiguous information about the rigs used. The size of a shipwreck's masts and sails can occasionally be estimated on the basis of its function, cargo capacity, and the wind conditions along its presumed route (Liebner 2014: 282-285). In certain regions, such as the Pacific, scholars have furthermore expanded their understanding of pre-modern sailing with simulation voyages – using full-scale replicas of historically documented boat types – and ethnographic studies (e.g. Anderson 2008).

While twentieth-century hypotheses of a unilinear evolution from the 'primitive' square sail to the modern Bermuda rig have become increasingly untenable (Campbell 1995; Whitewright 2015), I hope to demonstrate that questions pertaining to the directionality of sail development do not *a priori* compromise academic rigor, especially if linguistic data are taken into account as additional layers of evidence. The present study examines the diffusion of sailing technology, and particularly the contributions in this domain from insular Southeast Asia to other regions of the Indian Ocean. More specifically, it delves into the various sail types that enabled navigation across the sea lanes of the Indian Ocean. Both the eastern and western parts of this ocean display watercraft with triangular sails rigged alongside the keel of the boat, which enable sophisticated maneuvering into the wind. The extent to which these sail types, commonly known under the name 'lateen sails', have developed interdependently is scrutinized. Nautical vocabulary and sail-related lexical transmissions will serve as analytical tools to investigate the extent to which transmissions of nautical technology from one community to another are reflected linguistically.

It is not known when sailboats first entered the seascapes of Southeast Asia. As elsewhere, the earliest boat remains will have escaped archaeologists' attention due to their biodegradability. Accomplished sailors existed among the region's Pleistocene hunter-gatherers (Mahdi 2017). Their technology, however, proved insufficient to colonize the Remote Pacific; only by the early second millennium CE had sailing vessels become sophisticated enough to transport communities over the vast distances of that ocean, although the precise sail configurations under which the Pacific was initially settled remain up for debate (Anderson 2018). Comparatively larger watercraft developed in the waters of the South China Sea. From the first centuries CE, Chinese textual accounts detail diplomatic missions from several Southeast Asian polities, which transported exotic animals, products, and slaves aboard large watercraft (Pelliot 1925; Manguin 1993). Such ships were presumably manned by sailors from Sumatra and other Malay-speaking regions, which by the seventh century had become important entrepôts for China's Buddhist pilgrims en route to India (Liebner 2014: 34-37, 45-47). The presence of loanwords from Malay in languages such as Hindi, Tamil, Sinhala, Dhivehi, Swahili and Malagasy suggests an active involvement of Malay speakers in Indian Ocean commerce (Hoogervorst 2013).

Textual references to maritime activities and contacts across the Bay of Bengal abound in the Sanskrit, Pali and Tamil literatures (Sastri 1944; Mookerji 1957; Pandian 1989). However, most of these texts only inform us matter-of-factly that ocean-borne voyages and maritime trade were known and carried out; the absence of detailed technical descriptions and the lack of corroborating archaeological evidence urge the objective scholar not to read too much into such literary accounts. The Chinese literary corpus provides us with a number of elaborate descriptions of seafaring and ship-building. Some texts mention large, multiple-masted ships manned by Southeast Asian crews (Needham 1980: 600-602; Manguin 1993: 262-263). Although Chinese ships were also large, they were mainly used for transportation on rivers, lakes, and along coasts prior to the tenth century (Manguin 1993: 269).

As regards the iconographic evidence, scholars have frequently – and in my opinion somewhat excessively – called attention to the reliefs of the eighth to ninth century CE Borobudur temple in Central Java, which depict several large ships hoisting canted rectangular lugsails (Manguin 1980: 273, 1985: 12; McGrail 2001: 202-203). Mookerji (1957: 22-36) was among the first to compare the Borobudur vessels to those depicted on the Ajanta reliefs and several Coromandel coins, pointing out that all ship types involved exhibit multiple masts, a bowsprit, and lateral steering oars positioned at the sides of the hull (quarter rudders). In line with the 'Greater India' philosophy he espoused, the author conveniently interpreted this shared set of features as the result of unilinear Indian influence on Southeast Asia. Thus, according to Mookerji, '[m]ost of the sculptures show in splendid relief ships in full sail and scenes recalling the history of the colonization in Java by Indians in the earlier centuries of the Christian era' (ibid.: 31), while the crew consisted of 'Indian adventurers sailing to Java' (ibid.: fig. 1-5). Other scholars contended that the Borobudur ships are primarily part of a Southeast Asian tradition with several distinctive characteristics, such as compound tripod masts, obliquely set sails, and outriggers (Nooteboom 1950-1951: 126; Manguin 1980: 273). While the latter theory has considerably more to recommend it, the iconographic evidence itself tells us little about the origins, crew, manufacturers, and geographical distribution of the ships depicted. The extent to which the Borobudur ships belong either to a purely local or a trans-regional tradition is difficult to determine. It is relevant in this regard that some common names for sailboats are shared by multiple Indian Ocean languages (e.g. Hoogervorst 2013; see Table 1). Although a boat may carry different names across the Indian Ocean (cf. Ray 2016: 211) - and although one name may designate different boat types - lexical data remain among the strongest indicators of historical contact in the absence of unambiguous archaeological evidence.

Tamil	Malay	General meaning
campā <u>n</u>	sampan	Flat-bottom open boat of presumed Chinese origins
campōkku	sumbuk	Small flat boat used for near-shore sailing
cōṅku	jung	Large, long, sailing ship
kappal	kapal	Square-rigged vessel with deck
pațavu	perahu	Undecked, small sailing boat

Table 1. Examples of ship names shared by Tamil and Malay

The world's earliest sails

The first known depiction of a sailboat is from a sixth millennium BCE context in the Persian Gulf (Carter 2006: 53), while the ancient Egyptian use of sails goes back to at least the fourth millennium BCE (Ward 2006). From rectangular, rather vertical sails with a yard (the spar supporting the head of the sail) and a boom (the spar connected to the foot of the sail), they evolved into wider, loose-footed sails able to withstand the stronger winds they encountered on the open seas (Casson 1994: 14ff., 36ff.). It is unclear what these earliest sails were made of. Animal skins, woven reed, or other crude materials would have sufficed for rudimentary sails. Sophisticated sail types that needed to be furled or otherwise manipulated were presumably made of palm fiber, papyrus, flax, hemp or other grasses, making them almost impossible to detect archaeologically. Sail remains are notoriously inconspicuous due to oxidative degeneration, extraction of component parts of the fiber by metals (leaching), or destruction by micro-organisms (Black and Samuel 1991: 224). The sail and its supporting structures are furthermore often divorced from a shipwreck during the sinking process (Whitewright 2015: 570).

Egyptian-style loose-footed square sails came to prevail across the classical Mediterranean and Red Sea (Whitewright 2007) until the introduction of the lateen sail (see below). The more archaic quadrilateral sails with booms, meanwhile, have only survived on traditional boats in present-day Sudan – such as the *markab* and the *nuggār* – which are mainly used for Nile transportation (Hornell 1939-1940). The Egyptian *falūka*, a boat rigged with a triangular lateen sail and used in protected waters, also normally retains a boom at the foot of the sail (personal observation, 2011). Rectangular sails with booms were presumably much more widespread in the past. Whereas the introduction of the lateen sail – especially in the western part of the Indian Ocean – has obscured some of the pre-existing diversity, rectangular sails with booms have survived in the Bay of Bengal into modern times (Smyth 1906: 325, 333ff., 359ff; Bowen 1953: 110-111, 192; Deloche 1994: 151 fig. 28a, 182 fig. 38b; Kentley 1996: 252 fig. 3; Pohl 2007: 393-395). Perhaps the sailors of western Asia played a role in the eastward diffusion of this type of rig, although we have little information regarding the sails they used. Artifacts identified with the Harappan civilization, with which the western Asian populations maintained commercial relations, display a variety of sailing vessels (Deloche 1996; Ray 2003: 58-59; Rajamanickam 2004: 8). Along the Swahili coast, too, square and triangular sails have long coexisted (Hornell 1941; Garlake and Garlake 1964).

The relatively simple concept of a quadrilateral piece of textile or plant fibers hoisted from a spar may have been invented independently in different parts of the world. However, such a rudimentary square sail has inherent limitations. Square-rigged watercraft with sails positioned perpendicular to the keel cannot be navigated into the wind without the very time-consuming process of casting off the sail, changing the direction of the bow, and re-securing the sail. A significant improvement in maritime transport was the innovation of setting the sail along the line of the keel (fore-and-aft) rather than perpendicular to it, enabling navigation closer to the wind and in lighter winds (Bowen 1959; Palmer 2009). A considerable degree of nautical experience and several stages of testing on different hull shapes would have led to the development of more sophisticated sail types. In many cases, the distribution of new rigs was the result of diffusion, while boat hulls typically remained indigenous (Bowen 1953: 82-83).



Figure 1. Strategies for sailing into the wind. Drawing: T. Hoogervorst.

Three strategies of windward navigation prevailed in pre-modern times. The best-known method was to point the sail into the wind, let it go slack, move it to the other side while changing tack by angling the bow, reset the sail, and let the wind fill it again (tacking). To successfully tack or zigzag into the wind, a true fore-and-aft rig is required. Another way to navigate windward is to point the sail into the wind, loosen it, move it to the other side while changing tack by looping away from the wind direction, let the wind pass astern, reset the sail, and move further on the opposite tack (wearing). A third method is to loosen the sail, take it along the side of the vessel, and reset it in the opposite direction, enabling the vessel to continue navigating in reverse position (shunting). This technique requires a special type of reversible boat with interchangeable bow and stern (double-ended), a centrally positioned or unfixed mast, and an outrigger, which must be kept on the windward continuously in order not to plough into the ocean. Figure 1 presents an overview of these maneuvers.

Indian Ocean lateen sails

The triangular lateen sail has been the most prevalent – but by no means the only – rig in the western Indian Ocean (McGrail 2001: 278). Compared to a square sail, the shape and aslant position of the lateen rig enables easier control from the deck and more efficient use of the wind (Campbell 1995). Although it could be set along the line of the keel, the lateen sail is not a fore-and-aft rig in the true sense of the word, since it is supported by a yard which prevents it from being effectively shifted around the mast (Bowen 1953: 83 n.2). Rather, it seems to represent an intermediate developmental stage between a traditional square sail and a fully developed fore-and-aft sail (Bowen 1953; Campbell 1995). Its adoption by Iberian ship-builders eventually enabled their 'discovery' of the New World and other distant continents. Lateen sails involve fewer construction requirements and maintenance costs than square sails (Whitewright 2018). At the same time, they are notoriously slow and difficult to operate, especially in strong winds (Beresford 2013: 160).

It has been argued that the lateen sail has evolved from a specific type of canted, fore-and-aft set rectangular sail known as the 'dipping lugsail' (Bowen 1953: 187-189; Hourani 1995: 102-105). Indeed,

some of the lateen sails still found in the western Indian Ocean are technically quadrilateral, lacking a fore-part that ends in a foot. Alternatively, the rig may have developed from square sails brailed in a triangular shape (Casson 1971: 49-51). While often associated with Arabic or Persian seafaring, tentative identifications of lateen sails have been postulated in eastern Mediterranean iconography from the second century CE (Campbell 1995; Hourani 1995: 103; Beresford 2013: 166-167; Whitewright 2018). Both the textual and iconographic evidence suggest a large-scale replacement of square sails by lateen sails during the Byzantine era (Brindley 1926: 9-11; Hourani 1995: 103). In colonial times, it was reported as far east as Sumatra (Nooteboom 1952: fig. 2)

Based on simulations of classical Mediterranean watercraft, the prevalence of lateeners at the expense of square-rigged watercraft had little to do with the latter's oft-assumed lack of manoeuvrability (Palmer 2009; Beresford 2013: 158-160; Whitewright 2018). Starting from the early fifth century BCE, square-rigged Greek ships were generally equipped with a bowsprit on which a small spritsail, known as *artémōn*, was set to enable complex maneuvers (Casson 1994: 45-46). The ships depicted on the Ajanta and Borobudur reliefs – albeit belonging to different traditions – also display rectangular sails in combination with a foremast, which may suggest that the foresail had spread eastward across the ancient Indian Ocean as a result of Greco-Roman activity in these waters. While the lateen sail would increase a boat's windward performance and versatility on rivers and narrow waters, square sails were long preferred on larger ships on account of the stability and safety they offer (Whitewright 2010; Beresford 2013: 162-163). Only by the twelfth century were lateen sails also adopted on larger, two-masted galleys in the Mediterranean, possibly on account of developments in hull shapes (Steffy 1994: 92 fig. 4-17, 94 fig. 4-18; Whitewright 2009, 2018).

Square sails, triangular sails and other rig types have long coexisted in classical Europe, as revealed by pre-medieval Mediterranean iconography (Casson 1991: 195; Whitewright 2018). Being largely confined



Figure 2. Lateen-rigged watercraft, Kilifi, Kenya (Ania Kotarba-Morley 2012, used with permission).

to fishing boats and other relatively small vessels (Figure 2), the first lateen-rigged watercraft seems to have served quite different purposes than conventional square-rigged ships. Therefore, lateens could never completely replace loose-footed rectangular sails in the waters of the western Indian Ocean (Smyth 1906: 306; Bowen 1953: 186; Manguin 1985: 8, 2012: 604-605; McGrail 2001: 75; Whitewright 2015: 581-582). The persistence of square-rigged watercraft is substantiated by ample iconographic evidence, including the 1237 CE al-Ḥarīrī ship (Hourani 1995: 100-101, pl. 7), the Arabo-Indian ship depicted on a sixteenth-century CE fresco in the Tiruppuṭaimarutūr temple (Deloche 1983: fig. 1), and the Arabo-Indian ships depicted on an eighteenth century sea chart (Weismann 2012). In this regard, the main generalization seems to be that a new sail type was adopted when it would significantly benefit the purpose for which the vessel was designed. Only large commercial ships would have profited from the adoption of advanced rigs, while this would not have been a worthwhile investment for small-scale fishing vessels.

Southeast Asian spritsails

Despite the prevalence of lateen rigged dhows, sambooks, and other ships of the Arabian Sea which frequently visited the ports of the Bay of Bengal, the rectangular sail survived in the waters east of the Indian subcontinent. Rectangular sails with booms are documented throughout the Bay of Bengal and insular Southeast Asia (Bowen 1959: 196-197), while rectangular sails without booms have prevailed in Bangladesh (Greenhill 1957: 122 figs. 14-15, 133 fig. 21). Both types are normally hoisted from a fixed mast. Traditional medium-sized watercraft of insular Southeast Asia and Near Oceania exhibit a specific type of canted rectangular sail with boom (Brindley 1926: 16; Haddon and Hornell 1936: 52-54; Bowen 1953: 205 fig. 28b; Doran 1981: 40, 82 fig. 46). With the exception of the aforementioned Nile boats, this type of rigging is not documented in the waters of Indonesia. The tradition of using fixed masts, on the other hand, is found ubiquitously in the Indian Ocean, but not traditionally in insular Southeast Asia and Oceania. Consequently, Mahdi (1999: 159) proposes a scenario in which the rectangular sail entered insular Southeast Asia and eventually Near Oceania through several stages of cultural contact. Interestingly, double outriggers and a type of sailing boat known in Malay as *perahu* show similar geographical distribution patterns.

While the use of rectangular sails hoisted from fixed masts may be the result of a wider Indian Ocean practice (Horridge 1986: 56-57; Anderson 2018: 481), the presence of unfixed sprit spars to hold up the sail seems to be indigenous to insular Southeast Asia (Campbell 1995: 12). In this configuration - which remains prevalent on traditional insular Southeast Asian and Oceanic watercraft - the sail can easily be set foreand-aft or perpendicular to the keel, depending on the wind conditions. As with spritsails more generally (Beresford 2013: 167-168), the 'Oceanic spritsail' - as it is commonly known despite its likely Southeast Asian origins – combines well with small-sized watercraft but becomes unwieldy on larger vessels. It is supported by two converging spars whose forward ends are connected at the tack and fitted into a socket at the bow, giving the sail its characteristic V-shape (Horridge 1986: 85; Mahdi 1999: 157; Anderson 2018: 480). The leech of the sail is supported by the aft sprit and the peak is attached to the aft end of the forward sprit, which functions as a mast (Figure 3). The sail is occasionally hoisted from a true mast, which is rarely more than a short, unfixed spar positioned at the bow of the boat. Boats rigged with the Oceanic spritsail are able to come about to windward in a course of minimally 60-65° (Doran 1981: 36). In parts of insular Southeast Asia and Oceania, a further development to the Oceanic spritsail is the addition of a supportive prop, making the spars essentially a yard and a boom (Cotterell and Kamminga 1990: 251-252; Campbell 1995: 13-14). This type of rig is often – and somewhat misleadingly – called 'Oceanic lateen' (Mahdi 2017; Anderson 2018), as it is superficially similar to the triangular sails of the Mediterranean and western Indian Ocean. All types of Oceanic spritsails were traditionally made of matting woven from rattan, pandanus, or palm leaves (McGrail 2001: 289). None have been attested on large sailing ships.


Figure 3. Southeast Asian spritsails. Drawing: T. Hoogervorst.

The western Indian Ocean lateen sail and the Oceanic spritsail share some similarities in form, leading several scholars to consider scenarios in which one sail evolved out of or was influenced by the other (Brindley 1932: 308f.; Cotterell and Kamminga 1990: 251-252; Hourani 1995: 105; Mahdi 1999: 157-159; Horridge 2008: 102; Anderson 2017: 6-7; 2018: 481). One particular region indeed seems to feature a middle ground between the two rigging styles: the boats of coastal Orissa exhibit V-shaped sails with booms in the Southeast Asian fashion, but with a short luff characteristic of western Asian rigs (cf. Bowen 1953: 110-111, 192; Kentley 1996: 252 fig. 3; Pohl 2007: 393-395). These East Indian sails resemble the rectangular sails with lower boom attested throughout Southeast Asia. Such 'trapezoid lugsails' are hoisted from short masts stepped forward, a practice common in Southeast Asia, but also in Bangladesh (Greenhill 1957: 204). All of this is suggestive of a shared nautical tradition in the Bay of Bengal. In a wider context, however, the western Indian Ocean lateen sail and the Oceanic spritsail work in essentially different ways and have probably developed independently. Table 2, based on the descriptions of Bowen (1953: 110-111) and Campbell (1995: 17), summarizes the major functional differences between the two rigs.

In addition to these functional differences, the absence on West Asian watercraft of outriggers – which presumably co-evolved with local sail types in insular Southeast Asia (Mahdi 1999; 2017) – is an

Western Indian Ocean lateen sail	Oceanic spritsail
Has no boom	The aft sprit functions as a boom connected to the stern by a foot-rope
Is supported by a long, fixed mast, positioned close to the center of the keel and held in place by a rope	Has no mast or is supported by a short, canted, moveable mast, positioned far forward and held in place by a supportive prop and a mast-shore
Has a short luff on the forward edge of the sail so that the head of the sail is larger than the foot	Has no luff; its head and foot are equilateral
The foot is fastened by a rope	The tack is fitted into a socket at the forward end of the hull
Is quadrilateral with a vertical leech	Is triangular with the apex of the fore and aft sprit at the tack

Table 2. Differences between the western Indian Ocean lateen sail and the Oceanic spritsail

important further argument against significant Southeast Asian influence on the rigging traditions of the Arabian Sea. As upwind sailing inherently entails the danger of capsizing, the westward diffusion of fore-and-aft rigs would additionally require the adoption of outriggers to assure better stability. But Arab and Persian sailors rarely employed this device, unlike their colleagues in East Africa and South Asia. Southeast Asian and West Asian ships were navigated in completely different ways. While the lateen sail does offer greater maneuverability, upwind sailing was never popular among the sailors who adopted it (Campbell 1995: 18-19). Technically, tacking into the wind is possible on a vessel rigged with a western Indian Ocean lateen sail, although it is somewhat inefficient. Aside from the risk of capsizing, resetting the lateen sail involves large crews and clear decks. As its yard extends both fore and aft the mast, part of the sailcloth would back against the mast on the new tack (Bowen 1953: 189; Campbell 1995: 19; Beresford 2013: 162). As the design of the lateen sail allows it to catch a considerable amount of wind in any position, it would be aback but still drawing (a 'bad tack'). This marks a clear contrast with insular Southeast Asian sailing practices, in which tacking into the wind is commonplace and the use of outriggers nearly indispensable on the inherently unstable watercraft built up from dugout keels.

Besides the Oceanic spritsail, insular Southeast Asia is also home to a type of sail hoisted from a vertical or V-aligned bifid mast. This 'double spritsail' has historically been documented in somewhat different but clearly related forms in Sumatra, Sri Lanka, the Maldives, Madagascar, the Persian Gulf, and Melanesia (Bowen 1952: 216 fig. 13; 1953: 82-86; Doran 1981: 81) (Figure 4). This rig is somewhat inadequate for long sea journeys, windward navigation, and other sophisticated manoeuvres. Under a double spritsail, the only strategy to navigate into the wind is by 'shunting' – provided that the vessel's twin masts are centrally positioned and the hull is double-ended – as can be seen in traditional watercraft of Sri Lanka (Kapitän 2009) as well as parts of Melanesia (Doran 1981: 73-88). Bowen (1953: 87, 110 fig. 13) argues that the double spritsail was the predecessor of the Oceanic spritsail, whereas Horridge (2008: 102-103) suggests that it was a relatively late development. The recent (re-)identification of this sail on a late eighteenth century Māori double canoe (Anderson 2017) and on rock paintings in Tutuala on the eastern tip of East Timor (Lape *et al.* 2007: 247-248; Anderson 2017) would lend credence to the former hypothesis, implying that the rig was more common in eastern insular Southeast Asia and western Oceania than had previously been assumed.

Interpreting the linguistic data

If the double spritsail and the Oceanic spritsail have their ultimate origins in the waters of insular Southeast Asia, a follow-up question might be to what extent this is reflected in the linguistic data. The generic word for 'sail' can be reconstructed to proto Malayo-Polynesian *layaR, which is regularly reflected in several of the Malayo-Polynesian languages spoken in insular Southeast Asia, Madagascar, and Oceania (Pawley and Pawley 1994: 350; Wolff 2010: 886). Through the reflex layan 'sail' in Moken (a Malayo-Polynesian language spoken in the Mergui Archipelago), this word found its way into several mainland Southeast



Figure 4. Oceanic spritsail on small dugout canoe, Pulau Sapondan, Indonesia. Photo: T. Hoogervorst 2010.

Asian languages, e.g. Burmese *lan:yañ*, Shan *lān:yā:n*, Palaung *laŋ jan* and possibly Mon *yā*. The word has also spread into parts of South Asia, presumably via the Malay reflex *layar* 'sail'. Smith (1933: 216) was the first to demonstrate that Sinhala *ruval* 'sail' regularly goes back to *layar*. The same word also occurs as Dhivehi *riyau* and Pali *lakāra*. Somewhat counterintuitively, the phonological processes in these lexical transmissions are consistent (Haebler 1965: 118-119; Turner 1966: #10964); in proto-Sinhala, the intervocalic sequence /aya/ regularly becomes /uva/, whereas /l/ and /r/ often change positions through a linguistic process called metathesis. The Pali attestation *lakāra* – occurring in the *Visuddhimaga*, *Milindapañho*, *Sīlānisaṁsa Jātaka* and other texts (cf. De 1906-1907: 173; Haebler 1965: 113-114) – can be explained as the result of hypercorrection; lexicographers interpreted the form as a corruption and applied their knowledge of historical sound laws to make it look more 'native' (Hoogervorst 2013: 103-104).

Other South Asian attestations for 'sail' go back to Old Indo-Aryan **palla* 'cloth' (Turner 1966: #7967), and presumably postdate the introduction of Southeast Asian sail types into the subcontinent, since the prevalence of cloth sails seems to be a relatively recent development. Late Sanskrit texts also display the neologisms *marutpața* and *vātapața*, both meaning 'wind-cloth'. The hypothetical Old Indo-Aryan reconstruction **siḍha* ~ **sīta* 'sail' is not attested in the classical literature (cf. Turner 1966: #13397) but resembles Arabic *širā* 'sail; tent'. If this similarity is not due to chance resemblance or acquisition from a third source, the direction of borrowing remains obscure. The Dravidian words for 'sail' – e.g. Tamil *pāy*, Malayālam *pāy* – are semantically linked with the words for 'spreading', 'extension' and 'mat' (Burrow and Emenau 1984: #4088). The same etymology may underly the Swahili attestation *tanga* 'sail', which appears related to an earlier word for 'mat'.

As argued previously, the concept of a fixed mast was probably a secondary introduction into the maritime traditions of insular Southeast Asia, resulting from cross-fertilization with traditions from other parts of the Indian Ocean or the South China Sea. This innovation enabled Southeast Asian watercraft to employ more and larger sails. Based on textual evidence from Chinese accounts, Southeast Asian sailors used multiple fixed masts from at least the early first millennium CE (Manguin 1996: 189). A hybrid Chinese-Southeast Asian ship-building tradition flourished during the tenth century CE Song Dynasty (Manguin 1993: 270-274; 2012: 613ff.). In addition, Malay and other Southeast Asian boat-builders occasionally adopted Chinese battened lugsails on indigenous hulls (cf. Smyth 1906: 336ff.). Traditionally, however, unfixed spritsails would have sufficed on medium-sized plank-boats. In terms of the linguistic evidence, no word for 'mast' can be reconstructed to any high-level order of Malayo-Polynesian. At the same time, we also do not find clear evidence of lexical borrowing, with the exception of the obsolete Hindustani loanword *dol* 'mast' in Malay (Hoogervorst 2018: 521). Among the few attestations for 'mast' in Southeast Asia hat resemble South Asian words is the word *kokumbu* – found in the languages near Buton (Liebner 1993: 38) – which resembles Tamil *kūmpu*, Malayāļam *kūmbu*, Sinhala *kun ba-ya*, and Dhivehi *kunbu*. On account of the limited distribution of cognates elsewhere, I would argue that this similarity is fortuitous.

The adoption of fixed masts on Southeast Asian watercraft presumably coincided with the availability of superior materials to manufacture sails. As mentioned previously, Southeast Asian sail types were originally made of woven plant materials. In China, cloth sails were used from at least the first centuries CE (cf. Needham 1980: 600). The Z/Z-spun cottons found at the Red Sea shipping port of Berenike (third century BCE to third century CE) and Myos Hormos (late first century BCE to mid-third century CE) have been identified as sailcloth with reinforcing strips and brailing rings, probably imported from India but used on local ships (Wild and Wild 2001; Whitewright 2007; Handley 2011). They occur alongside rigging components characteristic of Mediterranean square sails, suggesting that this type was also historically common in the Red Sea (Whitewright 2015: 579-580). The archaeological record does not reveal whether Indian sailors also used textile sails on their own ships in the same period. Although cotton sails are more efficient to use and would not lose much wind through spaces between threads,

they are relatively difficult to weave and susceptible to rot and mold (Black and Samuel 1991: 222). It seems that cloth sails – cotton, linen, or other – were popularized throughout the Indian Ocean by West Asian sailors, a process that mainly took place in Islamic times (Bowen 1953: 82; Hourani 1995: 100). This transition may have been concomitant with the spread of the lateen sail, mentioned previously.

The linguistic evidence points towards a partly Persian origin and distribution of sailing technology across the Indian Ocean (cf. Glidden 1942: 71; Hoogervorst 2018). The Farsi word *dāman* 'sheet (a rope to control the sail)' has found its way into several languages around the Indian Ocean, including Arabic *damān*, Swahili *demani*, Malagasy (dial.) *demany*, Hindi *dāmān*, Marāṭhī *damān*, Tamil *tāmān*, and Malay *daman*. Interestingly, we see an almost identical distribution pattern across the Indian Ocean for the words for 'lateen yard' (known as *antena* in a Mediterranean context): Farsi *farman*, Arabic *faramān*, Somali *faarmaan*, Swahili *foromali*, Hindi *parvān*, Marāṭhī *parmān*, Tamil *paruvān*, Dhivehi *farumānu*, and Malay *peruan*. The adoption of West Asian-inspired cloth sails east of the Bay of Bengal – which presumably took place in relatively recent times – illustrates the readiness of sailors and shipwrights from Southeast Asia and other parts of the Indian Ocean to incorporate foreign elements into their nautical corpus if these constituted technical or cost-efficient improvements.

Conclusion

Several of the nautical traditions of the Indian Ocean have adopted and modified Southeast Asian rigging practices. The double spritsail – traditionally found in Madagascar, Sri Lanka, the Persian Gulf, and possibly in other places prior to the dispersal of lateen sails – is the clearest example. The trapezoid sails of coastal eastern India appear to be hybrid forms incorporating elements of the Oceanic spritsail and the western Indian Ocean lateen sail. Southeast Asian sailors also demonstrate a willingness to incorporate ideas from other rigging traditions into their own corpus of nautical technology, often resulting in hybrid ship types. The adoption of sailcloth at the expense of plant materials should be seen along similar lines. Another innovation to Southeast Asian sailing technology is the use of fixed masts, presumably adopted as a result of cultural contact and technology exchange with other nautical traditions in the Indian Ocean or South China Sea. It may be argued that the Bay of Bengal has developed its own sailing tradition, characterized by the incorporation of South Asian, Southeast Asian and Chinese elements. In the western parts of the Indian Ocean, several regional practices converged into a hybrid Arabo-Indian maritime tradition, which was reinforced by the expansion of Islamic networks. Consequently, it seems plausible that several shared innovations in the Arabian Sea – most notably the adoption of the lateen rig – were relatively late developments, superseding all previous technology.

This study highlighted several correlations between the diffusion of sail-related technology and the associated vocabulary. Occasionally we can pin down the exact origins and dispersal of sail types through a closer examination of the linguistic data. More often, however, the situation is more complicated. While the sailors of the Indian Ocean adopted various elements from insular Southeast Asian nautical traditions – such as the spritsail and the outrigger device – the original names did not always accompany the denoted items across ethno-linguistic boundaries. Many communities preferred indigenous descriptive terms – such as Sanskrit *marutpața* or *vātapața* 'wind-cloth' – over a foreign loan. In addition, sailors and shipwrights tend to be somewhat conservative in the watercraft they employ. Knowledge of seafaring can be highly lucrative and is therefore often secretive and transmitted intergenerationally. Fishing boats, in particular, tend to be traditional in design, while the patrons of commercial or state-owned ships were normally more inclined to invest in technological innovations that could increase the functionality of their vessels. All types of watercraft have evolved and keep evolving in a rational way, conforming to geographical factors – including the conditions of ports, rivers, bays, seas, and natural harbors – and the availability and affordability of technological devices and construction materials. Differences in sail types – and boat forms in general – are a reflection of the unique experiences and practices of the maritime communities that have adopted them.

Acknowledgments

This article is largely based on research underlying the author's DPhil dissertation as part of the Sealinks Project, funded through a European Research Council Grant, Agreement No 206148, awarded to Nicole Boivin. The lexical data analyzed here were collected during fieldwork conducted in South and Southeast Asia as part of this project. This research produced a monograph (Hoogervorst 2013); this paper is a revision of its sections on sailing technology, taking into account subsequent publications in the field. I am indebted to Waruno Mahdi, Alexander Adelaar, and the editor of this volume for their valuable and insightful comments on an early draft of this paper.

Mediaeval Fansur: a long-lost harbor in Aceh

Edmund Edwards McKinnon and Nurdin A.R.

Although the history of the sultanate of Aceh is well-documented from the early sixteenth century onwards, what existed in this region prior to 1500 CE is still very little known. Arab, Chinese and Indian records suggest that this area was familiar to foreign mariners and traders from about the eighthninth centuries CE on (Tibbets 1979; Wolters 1967). Investigations undertaken over the past three decades have begun to yield some evidence of earlier coastal occupation in this region. Archaeological evidence for two early harbor sites has come to light near modern Banda Aceh, the regional capital: one in the Bay of Pancu, also known as Lhok Lambaroneuiid, some twelve kilometers west of Banda Aceh (Edwards McKinnon 1988), and a second at Lamreh, located on the Krueng Raya or Great Bay of Aceh, some thirty kilometers to the east of the city (Montana 1997; Edwards McKinnon 2006). It is only since the horrendous earthquake and tsunami of 2004, however, that the realization came about that this was not the first such major seismic event to have impacted human settlement on the exposed coasts of west and northern Sumatra. Earthquakes and tsunamis have seemingly played a significant role in the history of this region over a long period of time (Reid 2009; Shirō and Reid 2013). Integrating the available information, this paper summarizes the situation in the Aceh Besar region regarding the impact of earthquakes and major tsunamis and how their impact may have obscured the existence of the major ancient harbor of Fansur, the Acehnese source of kapur fansuri or Fansur camphor.

Much ink has been spilled over the identification of the location of mediaeval toponyms in Southeast Asia and the case of Fansur is no exception. Barus, as a possible candidate for the location of Fansur, and known formerly to Tamil traders as Varocu, on the west coast of Sumatra, has gained much acceptance (Yule and Cordier 1903; Pelliot 1904: 342), though with reservations (Gerini 1909; Ferrand 1913-1914; Tibbets 1979; Drakard 1989; Ptak 1998; Guillot and Kalus 2008; Kévonian 1998; Perret and Heddy Surachman 2009). Several authors have raised doubts with regard to the identification of Barus with Fansur or expressed anomalies in the use of the term *fansuri*. Indeed, Tibbets (1979: 140) states that: 'Although the name no longer appears as a place name in Sumatra (sic) there are many references to it in the literature of all the races who visited the area up to the early part of the 15th century. It was famous for its camphor, which ranks as one of the best varieties'. Indeed, there can be no dispute with regard to ancient Varocu as the original Sumatran source of camphor par excellence in ancient times.

The location of Fansur recorded by Tibbets (1979) as given in Sulaiman al-Mahri (a sixteenth century Arabian source) is fairly clear; it is definitely located on the west coast of Sumatra: '…between the ports of Singkel and Pariaman, opposite Niha (Nias) and a little to the south of Pulau Banyak. It also has the same latitude as Rokan on the east coast. There is no doubt that it is the same as the modern district of Barus with which most scholars have identified it. It is of course the same as Marco Polo's Fansur, the Pasuri of the Malay annals and perhaps the Pin-su, Pan-tsu and Pan-tsu-erh of the Chinese texts' (*ibid.* 1979: 140). He goes on: 'The inhabitants are described by the Arabs, like those of most other places in Sumatra, as cannibals and according to Ibn Rusta they practice ordeal by fire. The story that the inhabitants have tails ('*Aja'ib al-Hind*), is a common one for this part of the world. Marco Polo states that men with tails are found in the mountains of Lambri, and many other references are mentioned by Gerini' (*ibid.*: 141). Furthermore, he discusses the name: 'Lulubilank which is mentioned by the '*Aja'ib al-Hind* as a bay in the sea between Fansur and Lamuri appears on modern maps as Telok Balang, or in Achinese as Iho' Belang Raya, south of Aceh' (*ibid.*). (Acehnese: Lhok Blang Raya.)

Place names and maps

In the above passages there are several points with which, in light of recent research, we would take issue. First and foremost is an understanding of the impact of geologic instability and of seismic forces in this region, as well as the point that 'the name no longer appears as a place name in Sumatra' (Tibbets 1979: 140). For some reason Tibbets missed the name Pancu, also written Panchu, which appears in a Dutch colonial map of 1924 (Topographische Inrichting 1924) (Figures 1 and 2) and in *Gazetteer (No. 10) Sumatra* (United States Navy Department Hydrographic Office 1944: 155), where Panchu, a village, is located at 5° 53' N, 95° 14' E. Also mentioned are Kuala Panchu, a river mouth at 5° 34' N, 95° 14' E, Krueng Panchu 5° 53' N, 95° 19' E, and Ujong Panchu (Pancu Point; also variously spelled Og Pantjoe and Ujg Pantyu) 5° 34' N, 95° 14' E. These are all, significantly, coastal locations. The Cedar (*Sawang Aroih Raya*) and Surat (*Sawang Aroih Cut*) passages lie almost immediately to the west of Ujong Pancu and Aceh Head. The so-called Bengal passage is to the northwest, and access to the Selat Melaka is but a short distance to the east. Pulo Weh, the Gamispola of Marco Polo, is visible offshore. The village of Lamreh, site of mediaeval Lamri, lies some forty kilometers to the east of Ujong Pancu on the Krueng Raya Bay.

Moreover, this same spot is almost precisely where the Lhok Lambaro (Lambaro Bay) is located: 5° 40' N, 95° 03' E (United States Navy Department Hydrographic Office 1944: 105), a bay which may be considered as the most westerly corner of the northern coast of Aceh. It is possibly this dual nomenclature which may have misled Tibbets - as it did one of the authors when writing on the subject of Lamri (Edwards McKinnon 1988). This is, however, almost exactly the location where Valentijn (1724-1726, Volume 2) quoted in English translation by Yule (1875: 286) described Fansur: 'Fansur can be nought else than the famous Pantsur, no longer known indeed by that name, but a kingdom which we become acquainted with through Hamzah Pantsuri, a celebrated poet, and a native of this Pantsur. It lay on the north angle of the Island, and a little west of Achin, (our italics) it formerly was rife with trade and population but would have been utterly lost in oblivion had not Hamzah Pantsuri made us again acquainted with it'.



Figure 1. Ujong Masammuka, Ujong Pancu and Pulo Batëe. Color map from Army Map Service (PV), Corps of Engineers, U.S. Army. 1954 (1945). Scale: 1:250,000. Line drawing by E. Edwards McKinnon



Figure 2. Aceh Head, Lhok Lambaro and Uleelheue. From Groot Atjeh en Onderhoorigheden, map, blad IVa, 1:40,000 (Topographische Inrichting 1924).

It would appear that the Ujong Pancu area is actually fully documented on colonial period maps of the Aceh region which is borne out by examination of the Dutch colonial map of Northwest Sumatra, Sheet IVa (1924) (Figure 2). It is thus somewhat surprising that the name Pancu or Pantju had not come to the attention of historians and historiographers in their discussions of ancient toponyms thought to have existed in this region. Indeed, in common with most scholars, in 1988 Edwards McKinnon gave little thought to the subject or those features as, like everybody else, he 'knew' that ancient Fansur was to be equated with the Barus region on the west coast of Tapanuli, in North Sumatra province. Having lived in Aceh after the tsunami of 26 December 2004 and having had time to become acquainted with this strategically-located coastline over a period of almost thirty years, we have had time to observe, reconsider and to re-learn.

Yule and Cordier (1903) thus fell into the same trap as everyone else. Having been misled by the red herring of the village of Panchor located inland of modern Barus, they, along with many others, overlooked the Bay of Pancu, immediately east of Aceh Head and approximately twelve kilometers west of the modern municipality of Banda Aceh. During the time of the Sultan Iskandar Muda (1607-1634), this bay was seemingly known as Indrapurwa. By the early seventeenth century, Fansur had indeed disappeared as various sources testify, only to be reinvented by numerous scholars under the name of Barus. Moreover, the earliest source which can be actually identified with modern Barus is that of Tome Pires (Wolters 1967; Drakard 1989: 60, 70-71; Ptak 1998: 142).

Valentijn was nearer in time than most others who have taken an interest in this toponym and in the former existence of Fansur but may well have had access to information that had 'disappeared' by the time later researchers began to investigate the problem of this former polity. From Valentijn's early eighteenth century map it may be seen that there is indeed space between Aceh (Kutaraja) and Aceh Head (Ujong Masammuka) for a strategically-located harbor settlement to have existed in former times (Figure 3). The Valentijn map shows two bays – though there is in fact only one that sweeps around from Uleelheue to Ujong Pancu. He may, however, have been intending to depict the two headlands of Ujong

Pancu and Ujong Masammuka (Aceh Head) which are located quite close together, though it cannot be said that there is a bay between them (Figure 4).

The Acehnese terms Pancu or Mata Ie are equivalent to the Malay Pancur(an) or Fansur(an) and Mata Ie, meaning a spring or source of fresh water. Arab texts mention both Fansur and Bâlûs but never equate one with the other. They were clearly two distinctly separate locations. There are at present several small springs rising at the foot of the limestone hills around the Bay of Pancu. One on the immediate western edge of the headland flows into a small bay known as Lhok Mata Ie; a second larger source rises behind the relocated villages of Lamgeuron and Lamteungoh. Other modern hamlets in the same vicinity, such as Lambadeuek, Lampageue, and Lamtutui would also appear to have had ample access to sources of fresh water. An informant in Lamteungoh relates that after several earthquakes in recent decades, the spring at the foot of the limestone hills which feeds the irrigated rice fields of the village and the river of that name is now considerably smaller than it was in the past.

It must be admitted that the whole question of nomenclature in and around the bay of Lambaroneujid or Pancu is somewhat confusing. Some names relating to Pancu and Lambaro continue in use; others have changed and yet others seem to have disappeared altogether. A French map attributed to 1792 gives the name of the Ujong Pancu headland as *Le pointe du Roi* [the King's Point] (Figure 5). This must be in error as modern maps show Ujong Raja [the King's Point] as being further down on the west coast beyond Ujong Masammuka.

Part of the confusion regarding place names must be due to ongoing and constant changes in the coastal morphology in the area around the Bay of Lambaroneujid (Lhok Pancu). Edwards McKinnon (1988: 115-116) wrote:

Figure 4. Two views of Lhok Lambaroneujid (Lhok Pancu) – the Bay of Pancu – from Lampageue with Pulo Weh in the background. The bay swings round in a great sweep eastwards towards Uleelheue and the Krueng Raya Photos: E. Edwards McKinnon.



Figure 3. Valentijn's Atsjien: Aceh circa 1724. Photograph: E. Edwards McKinnon 2011, of original content from Valentijn (1724-1726) Volume V; Echols Collection of Cornell University Library.





Figure 5 Aceh and Pointe du Roi (central lower embayment). The name Ujong Raja [the King's Point] is apparently given in error, and is actually some distance further down the west coast. From map purchased by G. Wade (used with permission): Plan de la rade d'Achem et des isles circonvoisines situées à la partie du nord-ouest de Sumatra, attributed to J.-B.-N.-D. d'Après de Mannevillette with G.N. Delahaye. Map provenance unknown, possibly from a volume dated 1792 (published after the author's death), based on online auction information, viewed 5 January 2020, https://gallica.bnf.fr/ark:/12148/btv1b59633164.highress.

'It seems that tides and currents are continually changing the morphology of the area. But more dramatic natural forces than tides are at work hereabouts. Banda Aceh lies at the northern end of a line marking the Sumatra Fault system which traverses the whole length of the island from Aceh to Lampung. Northern Sumatra is considered to be tectonically unstable and is seismically active, which accounts for the numerous earth tremors that are felt regularly in the Banda Aceh region. In addition to indicating changes in the coastline, the aerial photograph also revealed the presence of the rectangular outline of a submerged structure, some 120 meters from the current shoreline and about 450 meters northwest of the river mouth of Kuala Pancu as it was in 1978. This, and other physical evidence is sufficient to suggest that not only has the shoreline receded some 150 to 200 meters over the past eighty years (assuming that this submerged structure is, in fact, the former mosque) but that it has sunk at least two to three meters in the same period if one can judge from Snouck Hurgronje's report of earlier this century. Localized tectonic subsidence would, therefore, appear to be dramatically evident at Lambaro....A local informant indicated that the location of the village of Lambaro had been moved three times within living memory, the last time being early in the Japanese occupation when the inhabitants were forcibly removed from the shoreline and resettled at the foot of the surrounding hills. Yet earlier, a settlement is said to have existed in the area between the present beach ridge and Pulau Tuan (also known as Pulau Angkasa), a rapidly eroding islet a short distance offshore. It was presumably in this now submerged settlement that the former great mosque was located."

To the above observation may be added that due either to subsidence or to a former seismic event or tsunami, the location of this earlier mosque would apparently have been moved from its former location to its position in the present village of Lambadeuek, some 500 meters to the south of Pulo Tuan, where it was completely destroyed during the tsunami of December 2004. An inscription on the ancient *mimbar* read by Nurdin in this mosque in 1986 gave the name of the Sultan Alauddin Mahmud Syah.

New sources of information

More recently, new sources of information have become available. The first is scientific data following research on seismic activity following the 2004 tsunami, for which we are indebted to Kerry Sieh of the Earth Observatory of Singapore (personal communication, April 2012), who informed us that ongoing subsidence may be due to either seismic action or deltaic compaction, and is currently estimated at two centimeters per annum, which over a period of eighty years would have resulted in a lowering of approximately 1.60 meters, slightly less than estimated in 1988 by Edwards McKinnon. Historical records affirm that seven major earthquakes have triggered tsunamis along the west Sumatra subduction zone between 1833 and the present (Wilkinson 2005; Reid 2009). For this paper, of more interest are those which occurred in the late eleventh century, and in 1390 and 1450 (Reid 2009; Meltzner *et al.* 2010; Sieh 2012; Sieh *et al.* 2015).

A second source is information from Hilman Yacob (2008, personal communication), a native of neighboring Lamteungoh, now retired in Darussalam, who as a youth regularly went fishing in the Kuala Pancu, which he knew as the Kuala Bieng, or 'crab estuary'. He informed us that some sixty years ago there were seasonal rice fields known as the *Blang Pande meuih (Pandai emas)*, the 'gold smith's *sawah*', due to numerous and frequent finds of fragments of gold jewelry and gold and silver coins that were made when working the ground. These fields were located between the villages of Lambadeuek, Lamgeuron and the shore, but are now in the intertidal zone and have long since disappeared. Hilman Yacob also said that numerous sherds of Chinese stoneware were to be found along the beach. More importantly, however, he recalled that older inhabitants referred to the submerged mosque at Lambadeuek as the second or even third mosque known from this Lhok Pancu site. This information reminds us of a Roman coin of the Emperor Hadrian seen in Medan at some point during the 1970s, which was said to have 'come from Aceh.' Unfortunately, contact with the Chinese antique dealer who had possession of this coin was lost nor was a photograph taken of it.

Furthermore, Dutch colonial period maps of this region are now available on the internet, a source which was previously unavailable to us.

More recently, Meilianda (2009) suggests that the shoreline between Ujong Pancu and Uleelheue formerly ran in a straight line between one point to the other and that a considerable amount of coast has been simply lost at some point of time due to a major slump or series of slumps in this area. The recent recovery (Nurdin 2019) of a stone Buddha head from the bottom of a former fishpond in the hamlet of Tibang in Banda Aceh would tend to substantiate this hypothesis. Our own observations over the past four decades also affirm how rapidly changes appear in



Figure 6. Lhok Lambaroneujid: Pulo Tuan, Kualabaru in 1986; domestic rubbish on the surface at low tide. Photo: E. Edwards McKinnon.



Figure 7. Satellite image of Lhok Lambaro Neujid/Pancu following the tsunami of December 2004. The intertidal area, beach ridge and river mouth seen in 1986, and visible on the 1974 aerial photograph (Figure 8) have now completely disappeared. The now shallow inter-tidal zone is, however, visible under water with a new beach ridge forming in the bottom center. Source: Google Earth, viewed 2004, ca. 5°31'36' N 95°15'05' E, <earth.google.com/web>.

the morphology of the region. However, despite rapid changes following the tsunami of December 2004, at the present time (2019) the intertidal zone in the Bay of Pancu appears very similar in some respects to how it looked in the 1970s (Figures 6 to 9).

If our hypothesis is correct, seismic activity and an ancient tsunami or indeed several tsunamis and earthquakes resulting in subsidence or slumps caused the disappearance of ancient Fansur at some point or points in time during the late fourteenth to sixteenth centuries. There is now tangible evidence for major tsunamis having struck the west coast of Aceh in 1390 (+/- 3 years) and again in 1450 (Meltzner *et al.* 2010). As Fansur is generally thought to have disappeared in about the fourteenth century, the tsunami of 1390 (+/- 3 years) would have struck at precisely the time when the name Fansur would seem to have initially disappeared from the historical record. If this was not enough, a second major earthquake and tsunami struck this coast some sixty years later in 1450 (Sieh *et al.* 2008, 2015), some twenty years after the cessation of the visits of the Ming fleet under Admiral Zhenghe and about half a century prior to the rise of the sultanate of Aceh in circa 1500 CE.



Figure 8. Aerial photo of Lhok Lambaroneujid. Photo: E. Edwards McKinnon 1985, of original RAAF 1974 image, available at the Provincial Department of Public Works, Banda Aceh.



Figure 9. Pancu and Lambaro after the tsunami. Photo: Lim Chen Sian 2006.

Other tsunamis, both earlier and later, have also over several centuries affected this coast and of course elsewhere in Indonesia (Wilkinson 2005; Reid 2009; Barras 2012). The discovery of tsunami sands in a cave known as Guha Ek Leuntie, located near the village of Lhong, some thirty-five kilometers south of Banda Aceh and above the road to Meulaboh, revealed traces of historical tsunamis from 7,400 BP to the present. During the interval between 7,400 and 2,900 BP there had been no less than eleven such events. The authors (Rubin *et al.* 2017) note that the average interval between tsunamis is about 450 years, but these range from a long, dormant period of over 2,000 years to multiple tsunamis within the space of a century.

Moreover, during the major 9.1 Richter scale quake of December 2004 (Figure 9), several parts of the coastal areas in and around Uleelheue simply disappeared under water, so that dramatic disappearances of coastal areas in this region and indeed elsewhere are not unknown. Two other ancient port sites have, for example, suffered similar fates: Alexandria in Egypt and part of Mahabalipuram in Tamilnadu on the southeast coast of India.

EURASEAA14: ANCIENT AND LIVING TRADITIONS

A further source of information is archaeology. Although a harbor located in the Bay of Pancu may have lost its key role in the camphor trade, it was not completely abandoned either as a settlement or as an anchorage. Evidence from ceramic sherds suggests that although its former glory was never fully recovered occupation has continued around the edge of the bay until the present. Traces of habitation evidenced by a range of imported ceramic sherds dating from the southern Song (1127-1268), Yuan (1268-1360) and Ming (1360-1644) periods, along with Burmese, Thai and Vietnamese material and later Japanese and European wares (Edwards McKinnon 1992) suggest that the site, although overshadowed by Aceh from the early sixteenth century, remained as a useful anchorage and harbor.

The anchorage and adjacent settlements as seen by the Portuguese in the sixteenth century were described by Dom Joao Rebeiro Gaio, Bishop of Melaka, in an important work first published in 1584 (dos Santos Alves and Manguin 1997; P.-Y. Manguin 1999, personal communication). This archaeological evidence deserves greater attention but at present it lies predominantly under water or at best exposed briefly between tides in the intertidal zone. The remaining hinterland of the bay, such as that on the border between the villages of Lambaroneujid and Lampageu, may, however, yield more interesting information with regard to the past of this area, where several plang pleng grave markers exposed in an eroding beach ridge (Figures 10 and 11). Also, several late fifteenth century plang pleng grave markers have been discovered in an extensive burial complex located on raised bunds or ridges in neighboring Lamteungoh, where there is an early Islamic cemetery, suggesting that an important settlement may also have formerly existed in this vicinity.

Figure 11. An early c. fifteenth century plang pleng grave marker discovered in 2013 in an eroding beach ridge on the border between Lambaroneujid and Lampageu. This distinct pillar-like form of grave marker is one of several discovered in the vicinity. This form disappears from Aceh with the ascent of the sultanate in the late fifteenth or early sixteenth centuries. The stone is undated but bears a dedication to one Yusof Rahim (Deddy Satria, 2013, personal communication). Photo: E. Edwards McKinnon.



Figure 10. Lambaroneujid, eroding beach ridge with exposed burials. Photo: E. Edwards McKinnon.



It is important to note at this point that Sulaiman al-Mahri, who was perhaps the first author to mention the precise location of Fansur as lying in the Barus region of the west coast of Sumatra, was writing in 1511, at least a century after this coast had been struck by a tsunami in about 1390 and some sixty years after Fansur itself had 'disappeared', and by which time both Fansur and Lamri/Lamuri would appear have been absorbed by the then recently established sultanate of Aceh at an inland location on higher ground in Kota Alam, some distance upstream on the Krueng Aceh (Tibbets 1979: 14; Mills 1974, 2007: 412). The new settlement site would thus no doubt have been deemed a more central and safer location than one lying directly on the coast. Cham influences in Aceh, with which the sultanate is linked, are first thought to appear in about 1450/1470 (Lombard 2006), though Andaya (2008) would place them prior to the end of the first millennium. There are, moreover, traces of early, possibly pre-sultanate Islamic though 'Indianising' settlement at two or three locations in Pango Deah and Pango Raya on the banks of the Krueng Aceh that may relate to such circumstances. More research is, however, required in what is now a rapidly developing urban area before there is any certainty about this point.

Yet again, Lulubilank, which is mentioned in the *Aja'ib al-Hind* composed circa 1000 CE, is named as a bay in the sea between Fansur and Lamri/Lamuri. The reference to Lulubilank relates to a story of a group of sailors shipwrecked near Fansur, who were able to walk from there to Lambri, passing Lulubilank on the way (Tibbets 1979: 141). No timeframe is given for this journey but, if our hypothesis is correct, the distance along the shoreline from Lambaroneujid/Pancu to modern Lamreh, the site of mediaeval Lamri or Lamuri on the Krueng Raya, is no more than some forty to fifty kilometers. Even allowing for the crossing of two to four relatively broad river estuaries and the swampy hinterland of these same rivers, this journey on foot is unlikely to have taken much more than a week or two. The Krueng Raya would also have had to cross the Kuala Cangkoi/Krueng Neuheun at Lamnga, east of what is now Banda Aceh, but other than that travelling along the shoreline may have been relatively straightforward. Numerous streams from a hilly hinterland would no doubt have afforded access to potable water.

It is highly unlikely, if not almost impossible, for anyone to have walked along the west coast of Tapanuli and Aceh from Barus with its relatively difficult terrain, many river mouths and numerous other hazards in the tenth century and arrived safely at Lambri on the Krueng Raya, a distance of some 500 kilometers. Even allowing for a shortcut into the Aceh valley over the mountains from near Meulaboh, the situation is not that different. On the other hand, as pointed out above, the distance from Lhok Pancu (Lhok Lambaroneujid) to the village of Lamreh on the Krueng Raya, passing by way of Uleelheue would have taken little more than a week at the most, passing the locations of modern Lamnga, Ujung Batee and Ladong to the Krueng Raya Bay.

Additional literary sources relating to Fansur

The name Fansur appears in Arabic texts of the ninth century when it gave its name to *kapur fansuri* or the renowned camphor of Fansur. Sumatran camphor (*Dryobalanops aromatica* Gaertn) was known to the Chinese from at least the sixth century CE and possibly much earlier; in the west it is mentioned by Galen and Aëtius in classical sources (Innes Millar 1969: 25). Burkill *et al.* (1966: 546), an eminent authority on Southeast Asian vegetative products, estimated that commercial camphor was brought by the Arabs towards the Mediterranean 'about the time of Christ'. This suggests that Barus camphor was already an element in inter-regional trading activity almost a millennium prior to its mention in the Arab texts.

The earliest modern European source, as mentioned above, is Valentijn (1724-1726). It was Van der Tuuk (1866), however, who claimed that Fansur was the ancient name of Barus, and later Schlegel (1901) noted

that Fansur/Pantsur was Barus. Pelliot (1904: 341) in discussing Fansur and Barus considered that 'P'olou-che' (P'o-lu) (Fansur) was perhaps Barus, but that it was not absolutely certain. Gerini (1909: 434) discussed Fansur, but failed to locate it anywhere other than Barus. He stated in relation to a mention in the Malay literature: 'That Fansur here means Barus is evidenced by the route described as having been followed by the ship carrying the Muslimic mission from southern India to Fansur (Barus), Lambri, and Aru (east coast of Sumatra)', apparently not realising that a ship could have equally well have landed at the Kuala Pancu and then proceeded a short distance eastwards along the coast to Lamri on the Krueng Raya and thereafter eastwards along the shores of the Selat Melaka to Aru (Deli) and Perlak.

Pelliot (1904, 1963: 661) in an extensive discussion of the names Barus and Fansur noted that 'The 'kingdom' of Fansur, centre of production of the camphor called fansuri, is of course the region of Barus on the southwestern coast of Sumatra...But the difference in the use of the two names is not clear.' He goes on: 'The older name is that of Barus (modern Baros) ...The other name Fansur, appears first in Arabic texts, from the middle of the 9th century'. He concludes, however, by saying 'A last question remains. As has been said ... it is very doubtful whether Polo, although he remained several months at 'Sumatra' (Pasé) and says he is speaking only of the states of Sumatra that he has visited, would have gone out of his way to Barus, at least when he was accompanying the Mongol princess to Persia.'

Drakard (1989: 55), in discussing the early history of Barus makes several points of interest. She notes, quoting van Brakel (1969) that 'it has never been disputed that Fansur when used in early literature refers to this part of the north Sumatra coast...There is evidence that a port town as Fansur was visited by Arabs and Indians from at least the ninth century and Brakel, for instance has gone as far to suggest that this contact probably created a cosmopolitan trading milieu in which Hamzah might easily have learned Persian and been moulded into the cultural mediator he became.'

More recently, Ptak (1998: 122-123) in discussing Chinese references to Barus, touched upon the subject of Wolters' (1967: 185, 187-193) theory of the location of P'o-lu, placing P'o-lu 'between Aceh Head and Diamond Point', and in or near Lamri. The co-ordinates of Yixing's P'o-lu as given by Gerini relate reasonably well to those for Lambaro/Pancu (Edwards McKinnon 1988). Ptak (1998: 141) raised several important points: 'It was demonstrated that four Tang and pre-Tang toponyms possibly stood for a name like Barus: Poluosuo, Polü, Polushi, and Polu. Poli, it seems had very little to do with this Barus. Now, if these assumptions are correct one important question remains: where was Barus (or Polussuo/Polü/Polushi/Polu)? Was it, as many authors have suggested, identical with or near present-day Barus, or was it somewhere else, for example near Ramni, as Wolters has proposed...After all, did the name Barus and its possible Chinese representations stand for one specific port or rather larger region? Moreover, how can one relate the Chinese names to the Arabic ones? ... Early Arabic works from the ninth century on carry information on a camphor-trading place called Fansur...: this place it is clear is in the area of modern Barus. But Ibn Khurdadhbih (c. 850) and others who rely on his text - for example the Mukhtasar al-Aja'ib (c. 1000) - also mention a site called Balus. They indicate different locations and say this place was inhabited by cannibals: other than camphor it also produced coconuts, sugar cane, and so on. One important thing is, however, that Balus is never equated with Fansur in the Arabic texts.'

From the above, it is clear that the Arabs knew of two different harbors – Fansur and Balus. Balus, known to the Tamils as Varocu, has always been exactly where it is known to be located today. Fansur, or Pancu, located in Aceh, would, as far as a foreign geographer was concerned, be in the general area of the northern part of the island of Sumatra and would thus fit in to the same overall region as Barus.

An Armenian text of the twelfth century, 'Description of cities Indian and Persian', mentions Lamrin, Panchu, etc. (Kévonian 1998; Braginsky 1998: 369): 'The names [of the cities] of the Land of Gold are: / Lamrin, the principal city and island. Large quantities of silk [worms], much timber, called *pkam* [a tree species], and other excellent goods are shipped from there. / From here the traveller comes to Panchur, which is an island city of great wealth. The noble camphor is *obtained* from there. / Near Lamrin lies another island named Krut, where cheap cardamom is grown and exported.'

Logically, it is highly unlikely as pointed out by Pelliot (above) that anyone travelling from China in the northeast to the Persian Gulf in the west and relying upon monsoon winds, would have sailed in a south-easterly direction from Aceh to Barus prior to crossing the Indian ocean; Lambaro/Pancu is much more likely to be the point of departure from this island due to its strategiclocation, than Barus which is located some 500 kilometers to the south-east.

Several authors have raised questions about anomalies in relating Fansur to Barus. For example, Guillot et al. (2008: 322-323) discuss the undated epitaph of a certain Murra, inscribed on an octagonal pillar (no. 22), who was a pupil of the syeik and imam Mu'azzam Syah, from the city of Fansur. 'The text emphasizes that he originated from the town of Fansur (the name of Barus during the Middle Ages) (sic). But strangely, here the name is used in the nisbah form, that is Fansuri. This is quite surprising, the more so as the form is wrong (min balad Fansuri), whereas the burial itself is located at Barus...Hamzah Fansuri, the wellknown Indonesian Sufi saint... has been the subject of much debate. He died in the year 933 H., 1527 C.E. Does this epitaph reconcile with the name of Hamzah himself or to his place of origin? (Furthermore)... in ancient Malay texts - the Sejarah Melayu, Hikayat Aceh - Barus is mentioned as Fansuri not Fansur. Finally, the imam and khatib Murra was a follower of Syeik Sams al-din, as is the Sufi person named on the following nisan (no. 23)....An epitaph on [that] pillar is that of Syeik Zayn al-Abidin....Syeik Sams aldin...Is this person...another well-known Sufi cleric, the Syamsuddin al-Samatri who died in 1630 and who was a follower of Hamzah Fansuri?... Although Syamsuddin may have never ever lived in Barus, it is possible that a group of his followers may have invited him to stay there. It is clear that both of these epitaphs promote the teaching of Sams al-din, which means that he was a syeik of great importance... What was the relationship between Syeik Zaynal-Abidin and Syeik Sams al-din?...it would appear that the deceased was a follower of the teachings of Syeik Sams al-din (although not necessarily directly related to him). But in this inscription the word which appears between the two names is not entirely readable. The script does not carry any diacritics so that...our transliterations, i.e., ilyas or al-nas, are both unsatisfactory.'

This 'error' in the epitaph of Murra should perhaps have alerted Guillot *et al.* to the possibility that the location of Fansur was indeed elsewhere! The term Fansuri means 'of Fansur', someone who originated from Fansur, so the use of this term in an epitaph in his native place is inappropriate had he been a native of Barus. Cordier (1920; Yule and Cordier 1903: 303) mentions that 'Hamza Fantsuri' (after Veth 1873) was a seventeenth century poet who 'popularised the mystical theology of Shamsuddin Shamatrani... strongly tinged with pantheism. The works of both were solemnly burnt before the great mosque of Achin about 1640.'

What this may indeed suggest is that there were Sufi communities in both Pancur and Barus during the sixteenth/seventeenth centuries. Unfortunately, most of the numerous grave markers (*nisan*) seen in the Pancu area prior to the tsunami have almost all disappeared. Moreover, an octagonal but uninscribed pillar-like tombstone located on the top of the cliff overlooking the old cemetery and fort at Lubok, Lamreh, may suggest that there was also a contemporary Sufi community present in Lamri/Lamreh. It is interesting, indeed important, to note that on the Pancu Headland overlooking the approach to Lhok Pancu is a burial site, known locally as a *keramat panjang* or long shrine with mystical associations, which is reputedly the burial of Hamzah Fansuri (Figure 12).

Archaeological evidence, such as domestic rubbish and a number of now-lost walled burial complexes (known in Acehnese as *diwai*), suggests that by the sixteenth century the Bay of Pancu had been 'reoccupied' by several families. The then seat of political power was established upriver on the Krueng Aceh in Kutaraja, in what is now modern Banda Aceh, but there is no reason why the former inhabitants of Pancu/Lambaroneujid should not have been people of considerable means in what may have been a center of Islamic learning adjacent to an important natural harbor.

Discussion

There are several locations which have been suggested as possible locations for mediaeval Fansur, including one on the Johor River in Malaysia, one on an island in the Riau archipelago and yet others. None of these alternatives, however, have such a strategic relationship with Barus and the source of camphor, or lie at a focus of several ancient sailing routes, as does the Bay of Pancu. The Lamri coast of Aceh Besar lies between Aceh Head and the Krueng Raya Bay. This area provides strategically placed landfalls and



Figure 12. The keramat panjang located on Pancu Head, reputedly the burial place of Hamzah Fansuri. Photo: E. Edwards McKinnon.

access to numerous potable sources of water for ships arriving from southern India and Sri Lanka as well as from the Bay of Bengal. It is also a convenient departure point for westward bound shipping leaving the Selat Melaka either northwards to Kedah, Tenasserim and the Bay of Bengal or directly westwards to Sri Lanka, Coromandel and the Persian Gulf.

Recently, the situation leading up to the Cōla expedition into Southeast Asia has come under increased scrutiny. It is considered that the Cōlas were interested in facilitating access to the markets of south China, that was impeded by the Srivijayan grip on the Straits of Melaka (Kulke 1990). A Tamil guild presence on this coast is now established, with the discovery of a thirteenth century Tamil language inscription at Neusu in 1990 (Subbarayalu 2009: 529). It is likely, however, that such a presence of south Asian traders was already of long standing. The discovery of fragments of South Asian northern grey ware on the Lamreh headland indicates that this area was already part of an inter-regional sailing network involving South Asia possibly back some 2,000 years. Why does Lamri appear in Rajendra Cōla's Thanjavur inscription of 1025 C.E. and Fansur seemingly does not? A possible reason for this is that the Fansur part of the Lamri coast was already occupied by South Indian merchants, though Ilamuridesam was possibly still an indigenous settlement. The issue is currently unresolved.

Evidence for a cycle of major earthquakes and associated tsunamis that have impacted the north and west coasts of Aceh are now known to have occurred in the eleventh century, in 1390 (+/- 3), 1450, 1691, 1797, 1833, 1861, 1936 at Uleelheue, 2004 and 2012. It is thus apparent that this phenomenon is a regular occurrence associated with the seismic instability of the Sumatran subduction zone (Reid 2009).



Figure 13. Pulo Kuda Lakoe a small island located at the eastern end of Pulo Batëe with evidence of severe faulting. Photo: E. Edwards McKinnon.

Ongoing research suggests that there is evidence for events which have been affecting these coasts since the Holocene (Kerry Sieh, personal communication, April 2012 and 2016). Moreover, this same coast lies between the two forked ends of the Sumatra fault, one entering the sea at Pancu, the other though the Krueng Raya (Figure 13). This phenomenon could thus help to account for the ongoing instability of the coastline at the present time.

The main points for locating Fansur in the bay of Lhok Pancu, west of the modern city of Banda Aceh, rather than in the Barus region are thus as follows:

- Arab texts mention both Fansur and Bâlûs, but never equate one with the other. They are clearly two distinctly separate locations.
- Arab sources suggest that Fansur and Ramni (or Lamri) are located in close proximity to each other.
- Lhok Pancu, the Bay of Pancu, a coastal site with access to copious amounts of fresh water, is located immediately east of Ujong Masammuka, the most north-westerly tip of the island of Sumatra.
- The name 'Pancu' is the Acehnese equivalent of the Malay 'Fansur', a term meaning a source of fresh potable water.
- While there are undoubtedly several candidates for the name 'Fansur' on mediaeval sailing routes between China and South Asia, the Bay of Pancu is the most strategically-located coastal site, facing the Seas of Harkand and Selat, adjacent to the main sailing passages and routes known to the ancients along the northern coast of Aceh Besar.
- Pancu is a wide bay lying east of Ujong Masammuka (Aceh Head) and some forty to fifty kilometers west of the location of ancient Lamri/Lamuri on the Krueng Raya bay. It was also a major anchorage from mediaeval and pre-modern times with close access to both Kedah and the northern end of the Selat Melaka.

- Fansur was in all likelihood a conveniently and strategically located entrepôt, though clearly not the original source of the camphor prized by Arabs and others. Despite what some historical sources suggest, the original source of this resinous material was ancient Varocu, located in the Barus region north of Tapanuli Bay, some 500 kilometers further to the south-east.
- Writing in the early/mid-eighteenth century, Valentijn located Fansur a short distance to the west of Aceh. Valentijn related the Islamic mystic Hamzah Fansuri to his birthplace of Fansur.
- Archaeological ceramic evidence affirms that this site has been occupied, albeit possibly intermittently, from at least the eleventh to thirteenth centuries up until the present.
- It is now known that there were several major seismic events, one in the tenth or eleventh centuries, another in the late fourteenth century (circa 1390), and yet another in the mid-fifteenth century (circa 1450). Devastation due either to subsidence or the impact of a tsunami, or both, could thus account for the sudden disappearance of Fansur as a thriving harbor.
- Recent experience suggests that despite the inherent dangers, such locations were often reoccupied by survivors or new communities only a short time after such an event. Even so, for various reasons Fansur would appear to have lost its eminence.
- Pre-Islamic '*plang pleng*' grave markers marking the presence of a mid-/late fifteenth century Islamic settlement have recently been discovered, washed out of an eroding beach ridge in Lambadeuek/Lampageue, with additional examples from further out in the intertidal zone. Yet others have been located in a major burial complex in Lamteungoh, adjacent to the Lhok Pancu. Several of the *nisan* on the beach at Lambaroneujid would appear to have been re-deposited and perhaps buried by the tsunami of 1450.

Conclusion

If one accepts that Fansur was a strategically located entrepôt where camphor was available commercially, rather than the original or prime source of camphor resin, then the location of Fansur in a bay at the most north-westerly tip of Sumatra during mediaeval times is both perfectly feasible and eminently logical. Ptak (1998: 139) has already suggested this possibility. The whole coastal region between Ujong Masammuka (Aceh Head) to the Krueng Raya and Ujong Kelincu to the east of the Krueng Raya may be regarded as part of the Lamri coast and as thus a possible candidate for the Chinese toponym P'o-lu. Indeed, P'o-lu relates much more closely to the name 'pancu' than Ramni, Lamri or Lamuri, and we affirm that Wolters' (1967) argument for its location on this coast is essentially correct even though some of his other arguments as seen by Ptak (op. cit.) may be less convincing.

More work, including seismic studies, underwater survey and controlled excavation is obviously needed to confirm this hypothesis. Having considered the probabilities, however, we are convinced that Pancu is the location visited by ninth century Arab merchants to obtain fine quality camphor that originated from Varocu/Barus. Fansur, an entrepôt located on this coast, was thus an important precursor to the sultanate of Aceh and a more logical candidate than other known locations of the same or similar names. Not only did Pancu provide mariners with valuable sources of potable water but its strategic location was directly accessible to shipping from South Asia and the Bay of Bengal, and also gave direct access to the Selat Melaka, to the harbors of Srivijaya, and thereafter eastwards to Java and the Spice Islands of eastern Indonesia and northwards to China.

There is no dispute that the prime mediaeval source of camphor on the north-western coast of Sumatra was Varocu, located in an area now known as Barus, the ancient source of camphor *par excellence*, some 500 kilometers south-east of Pancu. It is eminently feasible that a high value product such as camphor could, however, have been carried in local coastal trade to the strategically-located northern tip of the island and thereafter linked into the extensive network of maritime commerce that later developed into the southern maritime silk route. After the tsunamis of 1390 (+/- 3) and 1450, which would appear

to have seriously impacted the coast and populations of what is now known as Aceh Besar, mariners apparently increasingly made directly for Barus, bypassing the devastated north-westerly settlement – an action which may have led to the association of the name Fansur with Barus, and confusion of the names with it in later Arabic texts. The Lamri coast thereafter seemingly remained more-or-less in limbo for about a century until the establishment of the sultanate in or about the year 1500, when the strategic location of Aceh and changing political circumstances once more attracted increasing amounts of inter-regional commerce.

Acknowledgments

We are grateful to Pierre-Yves Manguin, and for the kind assistance of Pak Adeh and Ibu Linda of the *Yayasan Lamjabat.* We are grateful to an anonymous referee for comments and suggestions.

'The world turned upside down': sago-palm processors in northeast India and the origins of Chinese civilization

Roger Blench

The usual image of the Sino-Tibetan language phylum is of a coherent grouping of agricultural peoples in the region between the Himalayas and Yunnan giving rise to the Sinitic languages and, in due course, to Chinese civilization, with a primary split leading to the development of other branches such as Tibetan and Burmese. This view has been compromised by recent findings in both linguistics and archaeology. Arunachal Pradesh and its region in Northeast India are largely occupied by highly diverse populations speaking either Sino-Tibetan languages or possibly isolates. Some of these peoples are former hunter-gatherers, and until recently depended for subsistence on tubers, vegetative crops and processing the sago palm, rather than rice and other cereals. The archaeology of northeast India is poorly developed, and in particular there are no direct dates to establish the date or process of the transition from foraging to agriculture. Linguistic methods can be used to contribute to hypotheses concerning the nature of this process. This paper explores regional linguistic ethnohistory, contributing a new and more accurate map of languages. It then looks at evidence for subsistence, in particular the significance of the mithun, a local bovid, and vegetative crops such as taro and the Musaceae. In particular, it argues that the languages ancestral to Sinitic emerged out of this region subsequent to other branches of Sino-Tibetan, first reaching northern China, adopting millet cultivation and then moving south to the Yang Tze valley. This constitutes a significant inversion of the usual narrative about the evolution of Chinese culture.

Introduction

Recent decades have seen a major expansion of knowledge concerning the prehistory of Southeast Asia, in part due to well-attended conference series such as EurASEAA and IPPA, and to the opening up of many regions previously closed for research. There is now a better sense of the chronology of the Neolithic in China and the much later transition to farming in mainland Southeast Asia (Blench 2005, 2011b; Rispoli 2008; Fuller et al. 2008; Higham and Higham 2009; Sidwell and Blench 2011; Higham and Thosarat 2012). However, a key region which has been largely neglected is northeast India. Archaeology and prehistory remain poorly developed, with the possible exception of some late Hindu temples and the megaliths of Meghalaya (Marak 2012; Hazarika 2017). But dates for the Neolithic and other key cultural stages, such as the introduction of metals, remain doubtful. There is not a single stratified site in the whole region which has been reliably dated and from which archaeobotanical and archaeozoological materials have been recovered. Linguistics can provide a window into the peopling of the region, albeit somewhat imprecise. Ethnoarchaeological accounts of local pottery in Arunachal Pradesh exist, but without regional context they can only convey limited information (Roy 2004). As a consequence, our understanding of the transition from foraging to farming has been hampered by a lack of hard evidence. Archaeological accounts of the region largely depend on surface finds or speculation (Banerji 1924-1925; Singh and Sharma 1968, 1969; Chakravarty 1973; Raikar and Chatterjee 1980; Singh 1980; Sharma 1984, 1990; Ashraf 1990; Tripathy 1998).

Nonetheless, the corridor between mainland India and Yunnan was of considerable importance in prehistory. Trade routes running both along the Brahmaputra valley and down from Tibet have operated over a long period (Aris 1980; Sikdar 2000; Pukhan 2002; Riddi 2002; Blackburn 2003/4, 2007), and show how both oral traditions and material culture travelled along the routes linking Arunachal and Yunnan. The transmission of cereals such as buckwheat (probably spreading east to Yunnan), and tubers such as taro and yam, *Dioscorea alata*, spreading westward to Nepal, presumably diffused along this corridor (Blench 2014).

A method that has so far had little prominence in the reconstruction of the prehistory of northeast India is the use of comparative and historical linguistics. This involves the compilation of lists of vernacular names for crops and animals or other subsistence items for as many languages as possible, and using similarities between lexical items to track borrowings and reconstructions (e.g. see Zide and Zide 1976 regarding agriculture and the Munda subgroup of Austroasiatic). By this technique we can detect relative antiquity (e.g. mithuns are old, goats recent), but also the geographic sources of adopted species (rice spreads up from the Brahmaputra valley, taro diffuses into the region from further east; Blench 2012a, 2013). These results do not give absolute dates, as these depend on a correlation with directly-dated materials derived from archaeology. But they do allow us to model the patterning of the transition from foraging and thus provide a background to target excavations.

This paper uses the linguistic geography of northeast India to model its likely prehistory in stratificational terms, in other words, suggesting the types of demographic movements that could have resulted in the current pattern of languages. The data from Arunachal Pradesh are partly drawn from my own research, but elsewhere I have had to depend on a wide variety of published and unpublished sources, in particular the online Sino-Tibetan Etymological Dictionary (STEDT) and Mon Khmer Etymological Dictionary (MKED). The second part of the paper compiles linguistic evidence for some examples of livestock species and crops as well as terms for iron, to try to determine the likely impact of this important technology on the region.

Linguistic background to northeast India

Northeast India remains one of the most poorly-known regions of the world linguistically speaking. New languages are regularly reported and the classification of many is disputed (Blench and Post 2013). Arunachal Pradesh in particular is inhabited by populations whose languages are hard to classify. Most have been treated as Tibeto-Burman although without any good evidence (Bradley 1997). Many languages are known only by name; no material has ever been published on them, and their actual affiliation remains unproven. A good example is Bangru, a Mijiic language on the border of Tibet, whose existence was first reported in 2012, and for which data were only published in 2015 (Bodt and Lieberherr 2015). It has become clear that the 'Sino-Tibetan' model is a weak hypothesis in accounting for the diversity of the region (Van Driem 2008a) but it has not been replaced by a robust new model. Figure 1 shows a linguistic map of northeast India, including the most recent discoveries. However, it is likely that future survey work will alter this picture.

From the Paleolithic onwards the region must have been inhabited by highly diverse hunter-gatherers. These would undoubtedly have spoken comparably diverse languages which have largely disappeared today, although evidence for them may survive as substrates in existing languages. Only in Arunachal Pradesh, where many languages such as Puroik, Mey, Bugun, Koro, Hruso and Miji are difficult to classify, are there probable survivals from this period. Elsewhere, such as in the Khasi Hills and the Assam plains, the subsequent expansion of incoming populations has eliminated the traces of the languages of foragers. In Arunachal Pradesh we find evidence that even populations which farm today, such as the Puroik and Milang, remained partly dependent on semi-wild plants, such as the sago palm and the tree-fern, until recent times (e.g. Stonor 1952; I. Lieberherr, personal communication, 2017). Undoubtedly, the isolation and difficult communications in Arunachal Pradesh have contributed to the persistence of these strategies.

The first clear evidence for the expansion in the region of an outside population is the spread of Austroasiatic. Only one Austroasiatic language, Khasian, is spoken in northeast India today, but distributional evidence makes it clear such languages must once have been common. The Munda languages are spoken in Orissa and other parts of subcontinental India, and these represent the



Figure 1. Ethnolinguistic map of northeast India. Redrawn and updated by the author from an original by Bishop's House, Guwahati (locally distributed).

westward limits of Austroasiatic (Sidwell and Blench 2011). There are two hypotheses to explain this: either a chain of languages must once have spread through this region, connecting Khasi to important Munda languages such as Sora and Santal (Diffloth 2008), or else the Munda arrived by sea on the east coast of mainland India, as in the 'Munda maritime hypothesis' advanced by Rau and Sidwell (2019). Figure 1 shows small islands of Munda languages within northeast India, but these appear to be recent back-migrations, not remnant populations.

Following this era, which may have been around 3500 years ago, Sino-Tibetan languages began further expansion. The exact homeland and period at which this took place is much disputed (van Driem 1998). Scattered across the region are various individual branches of Sino-Tibetan. including the isolates Meithei and Karbi [Mikir]. Two very widespread branches represented in northeast India are the Tani and Garo-Bodo peoples. The Tani peoples are a complex of language and ethnic groups spreading from the Tibetan Plateau down to the valley of the Brahmaputra. The Tani languages are all closely related and therefore they must have expanded relatively recently, perhaps around 1500 years ago, for reasons presently unknown (Sun 1993). The Adi and the Galo are probably their most well-known representatives, but there are many others. Reconstructions of crop names suggest strongly that they were already farmers. Much the same is true of the Garo-Bodo peoples, who occupy the Garo Hills in Meghalaya and the adjacent river valley. This group of languages is similarly coherent, although what drove their expansion is unknown. Other local expansions of Sino-Tibetan are the movement of the Jingpho into this region from South China. One language, Turung [Singpho], is spoken in the north of Arunachal Pradesh. Similarly, in the south of Mizoram, the Mog people represent the northern expansion of Arakanese, which is itself a dialect of Burmese. However, some of the incursions into northeast India are relatively late. All along the northern edges of Arunachal Pradesh there are Bodic languages, notably the Monpa/ Memba cluster, which are part of the same Sino-Tibetan subgroup as Tibetan. These seem to have expanded into the northern mountains and strongly influenced resident populations such as the Mey and the Nah, who are linguistically unrelated.

The subtext of this paper is a critique of existing Sino-Tibetan phylogenies and their interpretation for prehistory. Is it possible to put anything more nuanced in their place? If it is to be based on numerous low level reconstructions and regular sound correspondences, then this will be impossible for a long time to come. Any 'tree' should thus be treated as a speculation, a tool for thinking, a graphic that minimally shows consilience with low-level classifications and which is credible in the light of historical, epigraphic and archaeological evidence. Such a classification should not be afraid of single language branches. Especially in the arc of the Himalayas, where individual communities have been diverging from one another for millennia, it is entirely possible they will no longer have transparent relatives. Figure 2 shows a speculative genealogical tree of Sino-Tibetan which tries to set the languages of northeast India in context. It should be emphasized that this is very different from other published Sino-Tibetan genealogies (reviewed in van Driem 2002). It includes a number of languages listed in the Ethnologue (Eberhard *et al.* 2019, accessed 2009) for which there is no published evidence. The isolates of Arunachal Pradesh are shown within the light red rectangle to mark the uncertainties about their affiliation to Sino-Tibetan.

A particular problem in this context is the populations called by the general term 'Naga', spread across India and Myanmar (van Driem 2008b). Together with Kuki-Chin, the group counts some seventy-five languages, some forming tight groups, others loosely related. The many Naga subgroups share significant cultural traits, including the *morung*, a distinctive collective house with characteristic decorative features (Figure 3). Linguistically the Naga are so diverse that it is uncertain whether they form a coherent linguistic group. The only comprehensive overview, the unpublished Marrison (1967), is valuable but needs significant revision in light of more recent information. Naga proper divides into four major branches including some thirty languages, the Angami, Ao, Tangkhul, Zeme clusters, and six thus far unclassified lects. Kuki-Chin, which includes some languages labelled 'Naga', has at least fifty languages. This type of diversity suggests considerable antiquity, and the Naga probably migrated westwards into the region as foragers/vegeculturalists before 6000 BP.



Figure 2. Sino-Tibetan genealogical tree. By R. Blench.

Around the tenth century AD, perhaps earlier, came the incursion of Indo-Aryan, represented principally by the eastward extension of Bengali into the floodplains of the Brahmaputra valley, and the evolution of Assamese. The striking ruins of Dimapur were built during this period (Figure 4). These populations may have introduced wetfield rice cultivation, a technique previously unknown. Some of the Bodo-Garo groups who live along the river may well have been there for a long time, but the Mishing, a Tani people, seem likely to have migrated south into the valley and learnt rice cultivation from the Assamese.

The last major expansion was the Tai-Ahom. Representing the westernmost branch of the Tai languages, these peoples entered



Figure 3. Modern morung at Kisama. Photo: R. Blench.

the region in the early Middle Ages, probably originally as a military expansion (Bora 1996). Indeed, some of their forts can still be seen in the region of Itanagar (Figure 5). After their kingdoms broke up, they dispersed and became small village-oriented populations, which persist as the Khamti and others



Figure 4. The ruins of Dimapur. Photo: R. Blench.

(Gogoi 1996). Unlike many of the peoples in this region, the Tai had their own writing system, so there is a certain amount of information concerning their history (Morey 2005).

The British colonial era also had an important impact on language and ethnic distribution. Tibetan military expansion was under way in the late nineteenth century AD and British opposition effectively halted this process (Sikdar 1982). At the same time, the cessation of chronic warfare among the hill peoples allowed some of them to move south into the plains without fear of attack. The southern distribution of the Mishing is likely a reflection of this process.



Figure 5. Itanagar fort. Photo: R. Blench.

Linguistic reconstructions of crop and animal names

The mitun as prototypical livestock species

The mithun, or gaval (Bos frontalis), is the most prominent livestock species exploited in northeast India (Figure 6; Simoons and Simoons 1968). The mithun is a semi-domesticate, managed in forest tracts but also kept in or near villages. Mithuns are not used as work animals; their principal role is for sacrifice, and important life-cycle rituals and family ceremonies require their slaughter. Outside northeast India, mithun are imported primarily for the purpose of cross-breeding with other bovids, for example in Bhutan (personal observation, 2010). The relatively late arrival of other livestock species in the region is reflected in the lexicalization of the term for mithun as a 'prototypical' meat animal, with all other species being derived from it. Table 1 illustrates such a set



Figure 6. Mithun (Bos frontalis), Dali (Galo) village. Photo courtesy Mark Post.

for Aka [=Hruso] in Arunachal Pradesh. Table 2 shows that this same term is widely spread across the languages of northeast India and illustrates the deep-rooted importance of mithun culture in the region.

By way of contrast, Table 3 shows the names for the domestic pig in the languages of northeast India. These include the isolates Tibeto-Burman and Khasic (Austroasiatic). The data have been sorted by reflexes of the two most common roots, *#k.vak* and *#lik*, and the remainder given in a third column. It can rapidly be seen that there are multiple roots, reflecting the introduction and domestication of the pig from different directions (cf. Hongo *et al.* 2002). The roots *#k.vak* and *#lik* occur widely in Tibeto-Burman, and there are external cognates both in south China and in Austroasiatic languages.

Hruso	Gloss	Hruso	<u>Gloss</u>
fú	mithun	fú-n	cattle
fŭ babu	donkey	fŭ lhu impi	COW
fú-glu	sheep	fú msu	wild dog, wolf
f(ú)-gra	horse	fú fu bʃə	buffalo
fú hu	wild pig		

Table 1. Hruso livestock terminology (from Simon 1993 and the author's fieldwork)

Table 2. Mithun names in northeast India

Language	Name	Language	<u>Name</u>
Hruso	fu	Idu	Sa
Miji	fu	Miju	t∫al
Koro	sù	Proto-Tani	*60
Milang	asù	Mongsen Ao	a-t∫ə
Mey [=Sherdukpen]	smu	Lotha	t∫āró
Bugun	syá	Sorbung	səriám
Puroik	tfa	Tiddim	sial ²
Taraon	aʃya		

Subgroup	Language	#k.vak	#lik	Others
СТВ		*pwak		
Isolate	Puroik			mədu
Isolate	Aka	vo		
Isolate	Miji	30		
Siangic	Koro	·	lele	
Siangic	Milang			ayek
Меу	Sartang	swa?		
Меу	Rupa	swag		
Isolate	Bugun	wak		
Idu	Taraon		belleig	
Idu	Idu		bili	
Isolate	Miju		lii	
Bodish	Memba	p ^h a		
Bodish	Meyor		lik	
Tani	Nah		ərik	
Tani	Apatani			alyì
Tani	Galo		erek	
Tani	Tagin		arwk	
Karbi	Mikir	pʰak		
Zeliang	Liangmei	kabak		
Zeliang	Zeme	kebak		
Ao Naga	Mongsen Ao			a-úk
Ao Naga	Chungli Ao			ak
Ao Naga	Yimchungrü			аро
Angami Naga	Angami			mengi, t ^h ero
Angami Naga	Мао	ovo		
Angami Naga	Rengma			րս
Tangsa Naga	Nocte, Wancho	vak		
Tangsa Naga	Nga La [=Matu]	ok		
Tangsa Naga	Chang	ok		
Tangsa Naga	Phom	ok		
Tangsa Naga	Konyak	ak		
Tangsa Naga	Konyak			meila
Kuki-Chin	Tangkhul			hok
Kuki-Chin	Tiddim Chin			ŋal
Kuki-Chin	Lai	vòk		
Garo-Bodo	Garo	wak		
Garo-Bodo	Kokborok	wau?		
Garo-Bodo	Bodo			omá
Austroasiatic				

Table 3. Names for the domestic pig in northeast India.

Austroasiatic

Khasic

Proto Khasic

*sniaŋ

Subgroup	Language	Banana, plantain	Arum, taro
	СТВ	*s-ŋak (see note below)	*grwa
Isolates	Puroik	kep ^h ak, tfabuk	tfuwa
	Hruso	Ruloŋ	t ^h rə
	Miji	drθaŋ, lu?laŋ (E. dialect)	tca?
	Bugun	Tsyum	dzawk
Mishmic	Taraon	paydz dzey, a ³¹ la ⁵³	sam
	Idu	adzibru	sona
Mey cluster	Sartang	msuŋ	
	Mey of Rupa	msuŋ	
Siangic	Koro	gerdzi	lăm
	Milang		aaŋ
	Miju	Hambyooŋ	gal
Bodish	Memba		solum
	Meyor	sandzuŋ	
Tani	P-Tani	*kopak	
	Nah	Kupak	əŋi
	Galo	`kopak	еђуе
	Apatani	ku-pa	ш-ђе
	Bengni	ku-pak	ra-ñin
	Bokar	kuŋ kar	ñi-ruk
Tangsa Naga	Maring		bal
	Chang	thoŋo	
	Konyak	ngao	tiaŋ
	Phom	ŋu ³³	
	Nocte	kieke	
	Wancho	ŋa	
Ao group	Ao (Chungli)	soŋ mumu	yi
	Ao (Mongsen)	Мађи	ami
	Lotha Naga	yóţhì	mani
	Sangtam	lalemsi	panu
	Yacham-Tengsa	mongo	ni chang
Angami-Pochuri	Angami (Kohima)	Thayiesi	dzünuo
	Meluri	aŋatʃi	api
	Ntenyi	meniga khamuwa	api
	Rengma	teyija	vyi
	Sumi	aotfoti	ai
Zeme	Khoirao	mpoithai	
	Liangmei	nuna	
	Maram	kola	
	Puiron	makuŋ	
	Rongmei	hau	
	Zeme	herantfi	
Kuki-Chin	Thado		bâal

Table 4. Names for vegetative crops in northeast India (from the author's fieldwork and STEDT)

	Tiddim	bân lǎa	ba:l1
	Proto-Chin	6an hlaa	
Bodo-Garo	Atong	rek thai	riŋ
	Bodo	Talír	
	Deuri	Tiri	
	Kokborok	t ^h a-li	
Meithei	Meithei	Laphoi	
Karbi	Karbi	p ^հ uŋu	

Note that despite the link with English /*snak*/ the hypothesis is that the Musaceae were staple foods.

Foraged plants and evidence for crop domestication

Sago, the pith of *Metroxylon sagu*, remains a staple food of much of the lowlands of New Guinea and is grown as a reserve food in many swampy areas of the South Pacific (cf. Blench 2013). It is managed but not usually formally grown and is highly productive if not very nutritious (Rhoads 1981). The palm trunk contains a starchy interior which can be processed once the tree is cut down. In a region with a low human population density and dense forest, this is quite an attractive subsistence strategy and requires considerably less work than conventional agriculture. The only other region where it is exploited extensively is northeast India, where the Puroik [=Sulung] of Arunachal Pradesh still process it (Stonor 1952; Deuri 1982; Sharma 1984; Gangwar and Ramakrishnan 1990). Peoples such as the Milang prepare it to feed to pigs but will no longer eat it for everyday consumption (Modi 2008), although it is acceptable as a famine food (Figure 7). Peoples such as the Idu also remember the processing of sago in the recent past (Bhattacharjee 1983: 57). It is locally associated with the Puroik [=Sulung], but Ashraf (1990: 139) has a description of sago production among the Nishi, as well as a photograph of its processing.

In most areas of northeast India today, cereals constitute the dominant staple, rice in the lowland and mid-levels, millets in the higher montane areas. Even a fertilizer-hungry New World species like maize has now made a significant impact on cropping systems. However, there is every reason to think that prior to the last thousand years vegetative crops and a pseudo-grain such as Job's tears were the basis of subsistence. Throughout the region, tubers such as yams and taro are still grown, together with bananas, plantains and sugar-cane. Sago is exploited across Arunachal Pradesh, although it is often fed to pigs these days rather than processed directly for human consumption. The antiquity of these

crops and their diverse types is reflected in the diversity of the terminology applied to them. Table 4 shows the vernacular names for two other significant vegecultural crops, the cultivated Musaceae, bananas and plantains, and taro (*Colocasia esculentum*). The first line gives 'Common Tibeto-Burman' (CTB) as presented in STEDT, and is an illustration of the problems of historical reconstruction. It is not clear by what conceivable process the reconstructed forms can be arrived at by analysis of the lexical forms tabulated.

Blench (2012a) is a study of the broader context of vernacular names of taro which demonstrates that the spread of taro



Figure 7. Milang washing sago log. Photo: R. Blench.

cultivation in both island and mainland Southeast Asia can be linked to widespread lexemes. However, there is virtually no lexical evidence for either taro or banana being imported, and it is not unreasonable to imagine that this is a region of separate domestication, and that the boundary between wild and cultivated types is constantly crossed and re-crossed.

Reconceptualising Sino-Tibetan [=Trans-Himalayan]

Based on the above, what age and homeland can we assign to Sino-Tibetan? Determining the age and homeland of a linguistic phylum depends on several types of evidence coming together. It is assumed here that the results of linguistic reconstruction should be congruent with known archaeological, ecoclimatic and genetic data; if they are not, then the reconstruction should be treated as problematic (see Blench 2012b for a discussion of similarly problematic reconstructions in Austronesian). Without adhering to any strict version of glottochronology, it is reasonable to expect there to be some correlation between internal diversity and age. There are now reasonable dates for the diversification of phyla or subgroups such as Polynesian, Bantu, Mayan or Turkic (Blench 2004). These estimates are based on a combination of linguistic trees, reconstructible roots and archaeology in the presumed homeland. Furthermore, these are all branches of families where agriculture can be reconstructed without question. In other words, these allow us to estimate approximately the level of diversity there should be over a period of 3000-4000 years, the approximate age of Sinitic (a general term for the accepted seven branches of Chinese). Sinitic languages undergo a bottleneck around the period of the consolidation of the Qin kingdoms after 221 BC, and Archaic Chinese as represented in texts is thus not the direct ancestor of modern Chinese (Sagart 1999).

If the arguments of this paper are accepted, then in its earliest phase Sino-Tibetan was a congeries of diverse foragers in the region of Arunachal Pradesh. Confirmed dates for systematic exploitation of the Tibetan Plateau by hunters go back to at least 6900 BP (Aldenderfer 2011) and perhaps much earlier, although such dates remain speculative. Presumably some time must be allowed for movement from the thick forests to the more open montane regions, so it is reasonable to place the origins of Sino-Tibetan at around 8000-9000 BP. The diversification of the Naga and related peoples through vegeculture and mithun management can be hypothetically placed at around 6000-5000 BP, and the beginnings of livestock production in the Himalayas immediately after this.

The adoption of cereal agriculture in the Himalayan region may well be the initial engine pushing different branches of early Sino-Tibetan eastwards into China proper. There is strong evidence that, prior to the expansion of Sinitic proper, other Sino-Tibetan speakers had arrived earlier. At least two languages, Tujia and Bai (Figure 8), constitute independent branches of Sino-Tibetan, and, strikingly, preserve non-Sinitic vocabulary for agriculture (Blench 2011b). These peoples are now surrounded by Han Chinese but the Tujia, for example, call them *Kejia* 客家, i.e. 'guest people', as they are considered to have arrived much later.

There is strong evidence that early Sinitic speakers pushed northwards into the area south of modern Mongolia, and there encountered the ancestors of Altaic speakers (Starostin 2008 identifies a number of borrowings from Altaic into Old Chinese). Chinese millets, both foxtail, *Setaria italica* and broomcorn, *Panicum miliaceum*, were domesticated very early in this region. Liu *et al.* (2009) point to a period of 6500-5600 cal. BC for the earliest foxtail millet, for example at the sites of Xinlonggou, Inner Mongolia, and Cishan, Hebei. The primary movement of the Sinitic nucleus towards China can then be placed at around 4500-4000 BP. These dates remain approximate and further archaeological research may well provide a far more nuanced picture. Sinitic speakers became millet cultivators who only switched to rice when they pushed southwards into the Yang Tze valley, and probably adopted rice from the Hmong-Mien speakers already in residence.

The evidence presented in this paper is marked by absences: lack of cognate reflexes in many of the smaller branches of Sino-Tibetan, lack of a coherent internal structure and a failure of congruence with archaeology and genetics. Given this, any hypothesis concerning the spread and diversification of the phylum must be speculative and subject to revision. However, this model at least has the advantage of not contradicting the known parameters of prehistory and not requiring improbable reconstructions of subsistence lexemes at various levels of Sino-Tibetan. With this in mind, the following summary is put forward as a model of the evolution of the phylum; Figure 8 shows a highly simplified map of the early phases of this proposed movement:

- The earliest speakers of Sino-Tibetan were highly diverse foragers living in an arc between the eastern slopes of the Himalayas and regional lowland jungles up to 9000 years ago and practising arboriculture (sago). Some spoke early Sino-Tibetan languages, others unknown languages now present primarily as substrates and the rare case of a modern isolate, such as Kusunda.
- Seasonal foragers exploited the high Tibetan Plateau from 6900 BP and perhaps earlier.
- Perhaps a 6000-5000 BP 'livestock revolution' took place in the mid-level Himalayas, when yak herders moved into and settled the Tibetan Plateau permanently.
- Gathering of wild cereals (buckwheat etc.) and tubers (high-altitude taro) led to protoagriculture in the mid-level Himalayas.
- Foragers who will become the Naga complex began to practice vegeculture (taro, plantains) and animal management (mithun) by 6000 BP.
- By 5000 BP diverse early Sino-Tibetan groups in the Himalayas began spreading eastwards to China. Proto-Tujia, proto-Bai and probably others met unknown populations (Hmong-Mienic? Austronesians?) with domestic pigs and millet, while also cultivating and beginning to domesticate rice.
- Sinitic, however, was not a primary branch, but simply one language among the many migratory groups. Proto-Sinitic speakers encountered early Altaic speakers with foxtail millet and other crops.
- The Sinitic languages expanded southwards, assimilating or encapsulating many small groups. They encountered Hmong-Mien speakers with rice, and switched millet terminology to rice.
- Rice moved from India but also westwards from China (hence hybridized types) and overlay older cereals where ecologically possible.
- Ruminants (cows, sheep, goats) spread into China from Central Asia *c.* 4400 BP (? <Altaic for small ruminants but not cattle).
- Tibetic speakers underwent a major expansion around AD 800, largely assimilating linguistic diversity on the plateau.
- Rice invaded the lowland vegecultural zones rather later, probably with the arrival of Indo-Aryans in the tenth century, pushing taro into residual systems.
- Groups, such as speakers of early Burmic languages, spread southwards, fragmenting Austroasiatic-speaking peoples.

If these arguments are even partway accepted, then 'Sino-Tibetan' becomes a highly inappropriate name for the phylum, privileging as it does two low-level subgroups. It has been proposed to shift the term 'Tibeto-Burman' to refer to the whole phylum (van Driem 2002), but the same objection applies: Tibetan and Burmese are also two culturally-prominent subgroups of no classificatory significance. The proposal to use the term 'Trans-Himalayan', which would capture the geographical locus of the phylum without emphasizing individual subgroups, has begun to be accepted among scholars, and increasingly used in the titles of conference papers.



Figure 8. Possible pathways of early Sino-Tibetan expansion. Map: R. Blench.

Conclusions

The identification of Sino-Tibetan languages and the internal classification of the phylum have been strongly affected by complex cultural prejudices. Sinitic languages and Tibetan have been taken as somehow primary because of their historic written traditions; but this is not supported by the linguistic evidence. The actual data point to much later splits. All the significant diversity in Sino-Tibetan is found in northeast India and adjacent parts of Nepal, and it may be that some of the languages of this region are simply isolates. At the same time, this region is notable for an underlying subsistence strategy which was dependent on a semiwild livestock species, the mithun, as well as sago and vegetative crops which were also partly wild. This pattern has been obscured by the introduction of humid-zone cereals and the panoply of livestock species characteristic of Southeast Asia. The switch to dry-zone cereals (and possibly pigs) may have been the primary engine of a significant movement of several branches of Sino-Tibetan into China, of which Sinitic was not the first. When the Sinitic expansion did occur, its primary direction was to the North China Plain, where the dry-zone millets were adopted. Only when Sinitic speakers turned south and adopted rice were the key elements of 'Chinese' culture put into place. So, to return to the title, this really is 'The world turned upside down'. From an image of high-density rice-based agriculture, and all the typical cultural elements associated with Sino-Tibetan, we must rather think of low-density foragers, transformed by adoption of a mosaic of subsistence strategies, constructing Chinese identity relatively late in the day.

Acknowledgements

Thanks to Mark Post, Yankee Modi, Jummar Koyu, Paul Sidwell, Serwa Dajusow, Mite Lingi, Sokhep Kri and Tia Toshi Jamir for assistance in the field or with unpublished data.

Bibliography

- Abu Bakar, M.F. bin, no date, Colours of Islam, viewed 10 October 2019, <www.academia.edu/6434115/ Colours_of_Islam>.
- Adams, R., A. Kusumawati and H. Sukender. 2004. *The Megalithic Tradition of West Sumba: A Preliminary Report of Research in West Sumba, Indonesia.* Surrey: Simon Frazer University.
- Agrawala, P.K. 1995. The depiction of Māra in early Buddhist art, in K.R. van Kooij and H. van der Veere (eds) *Function and Meaning in Buddhist Art. Proceedings of a Seminar held at Leiden University, 21-24 October 1991* (Gonda Indological Studies 3): 125-134. Groningen: Forsten.
- Agrawala, V.S. 1939. Vasudhārā. Journal of the Indian Society of Oriental Art, June-December 1939: 13-17.
- Alberti, L.B. 1999. On the Art of Building in Ten Books. Translated by J. Rykwert, N. Leach and R. Tavernor. Cambridge: MIT Press.
- Aldenderfer, M. 2011. Peopling the Tibetan plateau: insights from archaeology. *High Altitude Medicine and Biology* 12 (2): 141-147.
- Allard, F. 1999. The archaeology of Dian: trends and tradition. Antiquity 73 (279): 77-79.
- Allison, J.P. 2018. Casting the equestrian monument of King Ang Duong at Ponhea Lu (2001-2003), in
 B. Vincent and M. Antelme (eds) Archaeometallurgy in Cambodia: current research and future prospects. *Siksācakr, Journal of Cambodia Research* 14-15 (2015-2016): 73-98.
- Allison, A.H. and J.P. Allison. 2550 [2007]. To make good Buddhas for the new generation: case study of a Bangkok bronze casting workshop from Ban Chang Lor in the context of the cultural, economic, technological and demographic changes of twentieth century Thailand, in Waruni Osatharom วารุณี โอสถารมย์ (ed.) ประวัติศาสตร์ศิลปะที่ต้องจารึก: รวมบทความวิชาการด้านประวัติศาสตร์ศิลปะ เนื่ องในโอกาสเกษยีณอายุ ราชการ รองศาสตราจารย์ ดร. พิริยะ ไกรฤกษ์ Prawattisāt sinlapa thī tộng chārưk: rūam botkhwām wichākān dān prawattisāt sinlapa nữang nai 'ōkāt kasīan 'āyu rātchakān Rộng Sāttrāchān Dộrộ. Phiriya Krairœk. [*Festschrift for Dr Piriya Krairiksh's 60th Year*]: 346-385. Bangkok: Amarin Press.
- Allison, J.P. and A.H. Allison. 2005. The Anandazina Buddha image at the Shinbin Nangaing Yan Aung Myin Pagoda on Nagaing Hill, Sagaing: methods of producing Myanmar's largest modern copperalloy seated Buddha image to date, in *Myanmar Historical Research Commission Proceedings, Part I, Golden Jubilee Commemorative Volume 1955-2005*: 69-81. Kamayut, Yangon: Universities Historical Research Commission, University of Yangon.
- Ambary, H.M. 1998. Menemukan Peradaban, Arkeologi dan Islam di Indonesia. [Finding the Civilization of Islam and Archaeology in Indonesia]. Jajat Burhanudin (ed.). Jakarta: Puslit Arkenas.
- Amiot, J.-M. 1779. Mémoire sur la musique des Chinois tant anciens que modernes. Volume VI des Mémoires, publié par l'abbé Roussier. Paris: Nyon l'ainé.
- Andaya, L.Y. 2008. *Leaves of the Same Tree. Trade and Ethnicity in the Straits of Melaka*. Hawai'i: University of Hawai'i. (Reprinted 2010. Singapore: National University of Singapore Press.)
- Anderson, A. 2008. Traditionalism, interaction, and long-distance seafaring in Polynesia. *The Journal of Island and Coastal Archaeology* 3 (2): 240-250.
- Anderson, A. 2017. Changing perspectives upon Māori colonisation voyaging. *Journal of the Royal Society of New Zealand* 47 (3): 222-231.
- Anderson, A. 2018. Seafaring in Remote Oceania: traditionalism and beyond in maritime technology and migration, in E.E. Cochrane and T.L. Hunt (eds) *The Oxford Handbook of Prehistoric Oceania*: 473-492. Oxford: Oxford University Press.
- Archaeological Team of the Provincial Museum of Yunnan. 1983. Yunnan Chenggong Tianzimiao Gumu Qun de Qingli [Excavation of ancient tombs at Tianzimiao, Chenggong, Yunnan]. *Kaoguxue Jikan* 3: 132-142.
- Ardalan, N. and L. Bakhtiar 1973. The Sense of Unity: The Sufi Tradition in Persian Architecture. Chicago: University of Chicago Press.

- Aris, M. 1980. Notes on the history of the Mon-yul corridor, in M. Aris and Aung San Suu Kyi (eds) *Tibetan Studies in Honour of Hugh Richardson*: 9-20. Warminster: Aris and Phillips.
- Army Map Service (PV), Corps of Engineers, U.S. Army. 1954 (1945). Kutaradja, Indonesia. Series T511, Sheet 1, 1:250,000, nb46-12A. Washington, D.C.: Army Map Service.
- Ashraf, A.A. 1990. Prehistoric Arunachal. A Report on Archaeological Exploration and Excavation at Kamla Valley with Reference to Parsi Parlo of Lower Subansiri District, Arunachal Pradesh. Itanagar: Government of Arunachal Pradesh, Directorate of Research.
- Baloch, N.A. 1980. *Advent of Islam in Indonesia*. Islamabad: National Institute of Historical and Cultural Research.
- Banerji, R.D. 1924-1925. Neolithic implements from the Abor country. *Annual Report of the Archaeological Survey of India 1924-5*: 102.
- Banerji, R.D. 1933. *Eastern Indian School of Medieval Sculpture* (Archaeological Survey of India New Imperial Series 47). Delhi: Manager of Publications.
- Ban Gu, no date, *Hanshu*, in Sturgeon 2019 'Chinese Text Project', viewed 26 November 2019, https://ctext.org/han-shu.
- Baoxing County Cultural Center. 1982. Sichuan Baoxing Xian Handai Shiguan Mu [Stone coffin tombs of the Han Dynasty in Baoxing County, Sichuan]. *Kaogu* 4: 377-380.
- Barras, C. 2012. Earth cracking up under Indian Ocean. *New Scientist* 2884, viewed 26 November 2019, https://www.newscientist.com/article/mg21528843-500-earth-cracking-up-under-indian-ocean/>.
- Barrett, D. 1954. Sculptures from Amaravati in the British Museum. London: Trustees of the British Museum.
- Barthoux, J. 1930. *Les fouilles de Hadda. III. Figures et figurines, album photographique* (Mémoires de la délégation archéologique française en Afghanistan 6). Paris: Les éditions d'art et d'histoire.
- Basak, B. 2009. Sa Huỳnh culture in the Thu Bon valley, 500 BCE-100 CE some queries and observations on the social context. Paper presented at the conference '100 Years Discovery and Research of Sa Huỳnh Culture', *Quảng Ngãi*, Vietnam, 24 July 2009. Unpublished manuscript.
- Bautze-Picron, C. 1991/92. Lakhi Sarai, an Indian site of Late Buddhist iconography, and its position within the Asian Buddhist world. *Silk Road Art and Archaeology* 2: 239-284.
- Bautze-Picron, C. 1995/96. Śākyamuni in Eastern India and Tibet in the 11th to the 13th centuries. *Silk Road Art and Archaeology* 4: 373-375.
- Bautze-Picron, C. 2003. The Buddhist Murals of Pagan: Timeless Vistas of the Cosmos. Bangkok: Orchid Press.
- Bautze-Picron, C. 2006. New documents of Burmese sculpture: unpublished 'Andagū' images. *Indo-Asiatische Zeitschrift* 10: 32-47.
- Becker, J. 1967. The migration of the arched harp from India to Burma. *The Galpin Society Journal* 20: 17-23.
- Bellina, B. and I. Glover. 2004. The archaeology of early contact with India and the Mediterranean world, from the fourth century BC to the fourth century AD, in I. Glover and P. Bellwood (eds) *Southeast Asia from Prehistory to History*: 68-89. London and New York: Routledge Curzon.
- Bellina, B., P. Silapanth, Boonyarit Chaisuwan, Cholawit Thongcharoenchaikit, J. Allen, V. Bernard, B.
 Borell, P. Bouvet, C. Castillo, L. Dussubieux, J. Malakie LaClair, Sachipan Srikanlaya, S. Peronnet and T.O. Pryce. 2014. The early development of coastal polities in the Upper Thai-Malay Peninsula, in N. Revire and S. Murphy (eds) *Before Siam: Essays in Art and Archaeology*: 68-89. Bangkok: River Books.
- Bellwood, P. 1992. Southeast Asia before history, in N. Tarling (ed.) *The Cambridge History of Southeast Asia, Volume 1: From Early Times to c. 1800:* 55-136. Cambridge: Cambridge University Press.
- Bénisti, M. 1981. Contribution à l'étude du Stupa bouddique indien: les stupa mineurs de Bodh-Gaya et de Ratnagiri (Publications de l'école française d'Extrême-Orient 125). Paris: Ecole française d'Extrême-Orient.
- Bennett, J. (ed.) 2005. Crescent Moon Islamic Art and Civilisation in Southeast Asia. Adelaide: Art Gallery of South Australia.
- Beresford, J. 2013. The Ancient Sailing Season. Leiden/Boston: Brill.
- Berggren, J.L. and A. Jones. 2001. *Ptolemy's Geography. An Annotated Translation of the Theoretical Chapters.* Princeton: Princeton University Press.
- Bernet Kempers, A.J. 1959. Ancient Indonesian Art. Amsterdam: C.P.J. van der Peet.

Bernet Kempers, A.J. 1991. Monumental Bali. Berkeley and Singapore: Periplus Editions.

Bhattacharjee, T.K. 1983. The Idus of Mathun and Dri Valley. Itanagar: Government of Arunachal Pradesh.

Bhattacharyya, D.C. 2001. The other meaning of the Earth-touching pose. *Roopa-Lekha* 67-71: 65-78.

Bianchini, F. 1742. *De Tribus Generibus Instrumentorum Musicae Veterum Organicae*. Rome: Imprensis Fausti Amidei.

- Binford, L.R. 1978. Nunamiut Ethnoarchaeology. New York: Academic Press.
- Black, E. and D. Samuel. 1991. What were sails made of? The Mariner's Mirror 17: 217-226.
- Blackburn, S. 2003/4. Memories of migration: notes on migration legends and material culture in Arunachal Pradesh. *European Bulletin of Himalayan Research* 25/26: 15-60.
- Blackburn, S. 2007. Oral stories and culture areas: from northeast India to southwest China. *South Asia* 30 (3): 419-437.
- Blench, R.M. 2004. Archaeology and language: methods and issues, in J. Bintliff (ed.) A Companion To Archaeology: 52-74. Oxford: Basil Blackwell.
- Blench, R.M. 2005. From the mountains to the valleys: understanding ethnolinguistic geography in SE Asia, in L. Sagart, R.M. Blench and A. Sanchez-Mazas (eds) *The Peopling of East Asia*: 31-50. London: Routledge.
- Blench, R.M. 2008. Musical instruments of South Asian origin depicted on the reliefs at Angkor, Cambodia, in J.-P. Pautreau, A.-S. Coupey, V. Zeitoun and E. Rambault (eds) *From Homo Erectus to the Living Traditions. Papers from the 11th EURASEAA meeting at Bougon, 25-29th September 2006*: 239-244. Chiang Mai: Siam Ratana.
- Blench, R.M. 2011a. Was there an Austroasiatic presence in island SE Asia prior to the Austronesian expansion? *Bulletin of the Indo-Pacific Prehistory Association* 30: 133-144.
- Blench, R.M. 2011b. The role of agriculture in the evolution of Southeast Asian language phyla, in N. Enfield (ed.) *Dynamics of Human Diversity in Mainland SE Asia*: 125-152. Canberra: Pacific Linguistics.
- Blench, R.M. 2012a. Vernacular names for taro in the Indo-Pacific region and their possible implications for centres of diversification, in M. Spriggs, D. Addison and P.J. Matthews (eds) *Irrigated Taro Colocasia esculenta in the Indo-Pacific: Biological, Social and Historical Perspectives*: 21-43. Osaka: Minpaku.
- Blench, R.M. 2012b. Almost everything you believed about the Austronesians isn't true, in M.L. Tjoa-Bonatz, A. Reinecke and D. Bonatz (eds) Crossing Borders: Selected Papers from the 13th International Conference of the European Association of Southeast Asian Archaeologists. Volume 1: 128-148. Singapore: NUS Press.
- Blench, R.M. 2013. Was there once an arc of vegeculture linking Melanesia with Northeast India? in G.R. Summerhayes and H. Buckley (eds) *Pacific Archaeology: Documenting the Past 50,000 Years. Papers from the 2011 Lapita Pacific Archaeology Conference* (University of Otago Studies in Archaeology 25): 1-16. Otago: Otago University Press.
- Blench, R.M. 2014. The contribution of linguistics to understanding the foraging/farming transition in Northeast India, in T. Jamir and M. Hazarika (eds) 51 Years after Daojali-Hading: Emerging Perspectives in the Archaeology of Northeast India. Essays in Honour of Tasrun Chandra Sharma: 99-109. New Delhi: Research India Press.
- Blench, R.M. 2017. Ethnographic and archaeological correlates for an MSEA linguistic area, in A. Acri, R.M. Blench and S. Landmann (eds) *Spirits and Ships: Cultural Exchanges in Monsoon Asia*: 207-238. Singapore: Institute of Southeast Asian Studies.
- Blench, R.M. and M. Post. 2013. Rethinking Sino-Tibetan phylogeny from the perspective of Northeast Indian languages, in N. Hill and T. Owen-Smith (eds) *Selected papers from the 16th Himalayan Languages Symposium, September 2010*: 71-104. New York: Mouton de Gruyter.
- Blom, J. 1939. The Antiquities of Singasari. Leiden: Burgersdijk and Niermans.

- Bodt, T.A. and I. Lieberherr. 2015. First notes on the phonology and classification of the Bangru language of India. *Linguistics of the Tibeto-Burman Area* 38 (1): 66-123.
- Boediardjo. 1978. Wayang: a reflection of the aspirations of the Javanese, in H. Soebadio and C.A. du Marchie Sarvaas (eds) *Dynamics of Indonesian History*: 97-122. New York: North-Holland Publishing Company.
- Boisselier, J. 1952. Běn Mãlã et la chronologie des monuments du style d'Angkor Vằt. Bulletin de l'École française d'Extrême-Orient 46: 187-226.
- Boisselier, J. 1965. Récentes recherches archéologiques en Thaïlande. Rapport préliminaire de mission (25 juillet-28 novembre 1964). *Silpākorn* 9 (2): 35-60; *Arts asiatiques* 12: 125-176.
- Boisselier, J. 1966. Le Cambodge. Manuel d'archéologie d'Extrême-Orient, Première partie: Asie du Sud-est. Paris: Picard.
- Boisselier, J. 1974. La Sculpture en Thaïlande. Fribourg: Office du Livre.
- Bonanni, F. 1722. *Gabinetto Armonico*. Rome: Giorgio Placho, Intagliatore and Gettatore di Caratteri. [Facsimile edition, Zentralantiquariat der Deutschen Demokratischen Republik, 1975.]
- Bonatz, D. 2002. Megaliths on Nias: the retention of identity. *Indonesia and Malay World* 30 (88): 253-267.
- Bonatz, D. 2009. The megaliths on Nias, in P. Gruber and U. Herbig (eds) *Traditional Architecture and Art on Nias, Indonesia*: 64-71. Vienna: IVA-ICR.
- Bora, D.K. 1996. *History and Archaeology of Itanagar*. Itanagar: Government of Arunachal Pradesh, Directorate of Research.
- Borell, B. 2014. The power of images. Coin portraits of Roman emperors on jewellery pendants in early Southeast Asia. *Zeitschrift für Archäologie Außereuropäischer Kulturen* 6: 7-43.
- Borell, B., B. Bellina and C. Chaisuwan. 2014. Contacts between the upper Thai-Malay Peninsula and the Mediterranean world, in N. Revire and S. Murphy (eds) *Before Siam: Essays in Art and Archaeology*: 98-117. Bangkok: River Books.
- Bosch, F.D.K. 1960. *The Golden Germ: An Introduction to Indian Symbolism.* Translated by A. Fontein. The Hague: Mouton and Co.
- Bowen, R.L. 1952. Primitive watercraft of Arabia. The American Neptune 12 (3): 186-221.
- Bowen, R.L. 1953. Eastern sail affinities. The American Neptune 13 (1): 81-117 and 185-211.
- Bowen, R.L. 1959. The origins of fore-and-aft rigs. The American Neptune 19 (4): 155-199 and 274-306.
- Bowie, T. (ed.) 1960. The Arts of Thailand. Bloomington: Indiana University Press.
- Bradley, D. 1997. Tibeto-Burman languages and classification, in D. Bradley (ed.) *Tibeto-Burman Languages of the Himalayas* (Pacific Linguistics A-86): 1-72. Canberra: Australian National University.
- Braginsky, V.I. 1998. Two Eastern Christian sources on Medieval Nusantara. Bijdragen von het Koninklijk Instituut voor de Taal-, Land- en Volkenkunde van Nederlandsch Indië 154 (3): 367-396.
- Brandes, J.L.A. (ed.) 1909. Beschrijving van Tjandi Singasari en de Wolkentooneelen van Panataran; samengesteld naar de gegevens verstrekt door H.L. Leydie Melville en J. Knebel. s-Gravenhage: M. Nijhoff; Batavia: Albrecht and Co.
- Brereton, B.P. 1995. Thai Tellings of Phra Malai. Texts and Rituals Concerning a Popular Buddhist Saint. Tempe: Arizona State University.
- Brindley, H.H. 1926. Early pictures of lateen sails. *The Mariner's Mirror* 12: 9-22.
- Brindley, H.H. 1932. Primitive craft evolution or diffusion. The Mariner's Mirror 18: 303-317.
- Brown, R. 1990. God on Earth: the walking Buddha in the arts of South and Southeast Asia. *Artibus Asiae* 50: 73-107.
- Burckhardt, T. 1980. *Art of Islam: Language and Meaning.* London: World of Islam Festival Publishing Company Ltd.
- Burgess, C.M. 1985. Cowries of the World. Cape Town: G. Verhoef Seacomber Publications.
- Burgess, J. 1887. The Buddhist Stupas of Amarāvatī and Jaggayyapeta in the Krishna District, Madras Presidency, Surveyed in 1882 (Archaeological Survey of Southern India I). London: Trübner.
- Burgess, J. 1900. The Gandhara sculptures. The Journal of Indian Art 8 (61-69): 23-40 and plates.

Burkill, I.H., W. Birtwistle, F.W. Foxworthy, J.B. Scrivenor and J.G. Watson. 1966. A Dictionary of Economic Products of the Malay Peninsula, Volumes 1-2. Kuala Lumpur: Ministry of Agriculture and Cooperatives.

Burrow, T. and M.B. Emenau. 1984. Dravidian Etymological Dictionary. Second edition. Oxford: Clarendon Press.

Cadeliña, R.V. 1973. Comparative remarks on the Negritos of southern and northern Negros. *Philippine Quarterly of Culture and Society* 1 (3): 220-223.

- Cadeliña, R.V. 1974. Notes on the beliefs and practices of contemporary Negritos and the extent of their integration with the lowland Christians in southern Negros. *Philippine Quarterly of Culture and Society* 2 (1-2): 47-60.
- Cadeliña, R.V. 1983a. Negrito studies on Negros Island: an introduction. Silliman Journal 30: 93-97.
- Cadeliña, R.V. 1983b. An action agenda for the Negritos: looking ahead. *Silliman Journal* 30: 176-182.
- Cadeliña, R.V. 1985. Alternative extension strategies for native population in the uplands: the case of the Ata in Cangguhub, Mabinay, Negros Oriental. *Silliman Journal* 35: 117-130.
- Cadeliña, R.V. 1988a. The policies of scarce resource among the Ata: an experience derived from their farming systems development project. *Silliman Journal* 35: 48-72.
- Cadeliña, R.V. 1988b. Contractual agroforestry scheme: an experience toward agroforestry development among the Negritos of Negros Oriental. *Silliman Journal* 35: 98-116.
- Cadeliña, R.V. and R. Puracan. 1985. Productivity changes of the Ata: effect of agricultural intervention on native tribal population. *Silliman Journal* 35: 167-186.
- Calo, A. 2009. *The Distribution of Bronze Drums in Early Southeast Asia: Trade Routes and Cultural Spheres* (British Archaeological Reports International Series 1913). Oxford: Archaeopress.
- Campbell, I.C. 1995. The lateen sail in world history. *Journal of World History* 6 (1): 1-23.
- Carter, R. 2006. Boat remains and maritime trade in the Persian gulf during the sixth and fifth millennia BC. *Antiquity* 80 (307): 52-63.
- Casson, L. 1971. The origin of the lateen. The American Neptune 31: 49-51.
- Casson, L. (trans.). 1989. The Periplus Maris Erythraei: Text with Introduction, Translation and Commentary. Princeton: Princeton University Press.
- Casson, L. 1991. The Ancient Mariners: Seafarers and Sea Fighters of the Mediterranean in Ancient Times. Second edition. Princeton: Princeton University Press.
- Casson, L. 1994. Ships and Seafaring in Ancient Times. London: British Museum Press.
- Chakravarti, R. (ed.). 2001. Trade in Early India. Oxford: Oxford University Press
- Chakravarty, L.N. 1973. *Glimpses of the Early History of Arunachal.* Third edition (1995 reprint). Itanagar: Government of Arunachal Pradesh.
- Chattopadhyaya, B.D. 1987. Transition to the Early Historical Phase in the Deccan a note, in B.M. Pande and B.D. Chattopadhyaya (eds) *Archaeology and History. Volume II*: 727-732. New Delhi: Agam Kala Prakashan.
- Chattopadhyaya, B.D. 1997. Political processes and the structure of polity in early medieval India, in B.D. Chattopadhyaya (ed.) *The Making of Early Medieval India*: 183-222. New Delhi: Oxford University Press.
- Chattopadhyaya, S. 1980. The Periplus of the Erythaean Sea and Ptolemy on Ancient Geography of India. Calcutta: Prajñā.
- Chengdu Institute of Cultural Heritage and Archaeology. 2006. *The Jinsha Site*. Beijing: China Intercontinental Press.
- Childe, G.V. 1948. Megaliths. Ancient India 4: 5-13.
- Christie, J.W. 1995. State formation in early maritime Southeast Asia: a consideration of theories and data. *Bijdragen tot de Taal-, Land- en Volkenkunde* 151 (2): 235-288.
- Chrysoloras, E. and J. Angelus (trans). 15th century. *Geography with Twenty-seven Maps*. The British Library Harley Manuscript 7182 '11th Map of Asia India beyond the Ganges, the Golden Chersonese, the Magnus Sinus, and the Sinae' from Ptolomy; attributed to F. Di Antonio del Chierico. Viewed at Wikimedia Commons, 'File:Ptolemy Asia detail.jpg', 15 December 2019, https://en.wikipedia.org/wiki/Geography_(Ptolemy)#/media/File:Ptolemy_Asia_detail.jpg>.

- Chutiwongs, N. 2004. Candi Singasari a recent study, in I.C. Glover, E.A. Bacus and P.D. Sharrock (eds) *Interpreting Southeast Asia's Past, Monument Image and Text*: 100-121. Singapore: National University of Singapore Press.
- Claessen, H.J.M. 1986. Kingship in the early state. *Bijdragen tot de Taal-, Landen Volkenkunde* 142 (1): 113-127.
- Claessen, H.J.M. and P. Skalnik (eds). 1978. *The Early State*. The Hague: Mouton.
- Claeys, J.-Y. 1931. L'archéologie du Siam. Bulletin de l'École française d'Extrême-Orient 31: 361-448.
- Clifford, H. 1904. Further India. New York: Lawrence and Bullen.
- Cœdès, G. 1919. A propos d'une stèle sculptée d'Angkor Vat, in *Mémoires concernant l'Asie orientale: Inde, Asie centrale, Extrême-Orient II* (Académie des Inscriptions et Belles Lettres): 117-122. Paris: Leroux.
- Cœdès, G. 1959. Note sur une stèle indienne d'époque pāla découverte à Ayudhyā (Siam). Artibus Asiae, Special Number Dedicated to the Memory of Alfred Salmony 22 (1:2): 9-14.
- Cœdès, G. 1968a. Une vie indochinoise du Buddha: la Pathamasambodhi, in N. Tsuji, J. Filliozat, S. Radhakrishna and authors (eds) *Mélanges d'indianisme à la mémoire de Louis Renou* (Publications de l'Institut de civilisation indienne 28): 217-227. Paris: de Boccard.
- Cœdès, G. 1968b. *The Indianized States of Southeast Asia*. Honolulu: East-West Center.
- Commission for the Preservation of Ancient Monuments, Municipality of Kunming 昆明市文物管 理委員會. 1985. 呈貢天子廟滇墓 [Ancient Dian Tombs at Tianzimiao, Chenggong County]. Acta Archaeologica Sinica 考古學報 4: 507-545.
- Commission for the Preservation of Ancient Monuments, Municipality of Kunming. 1994. Chenggong Tianzimiao Gumu Qun Di san ci Fajue Jianbao [Brief report on the third excavation at Tianzimiao, Chenggong]. *Yunnan Wenwu* 39: 9-12.
- Coomaraswamy, A.K. 1923. Catalogue of the Indian Collections of the Museum of Fine Arts, Boston, Part I-II, Sculpture. Boston: Museum of Fine Arts.
- Coomaraswamy, A.K. 1935. *Elements of Buddhist Iconography*. Cambridge: Harvard University Press.
- Cordier, H. 1920. Ser Marco Polo: Notes and Addenda to Sir Henry Yule's Edition, Containing the Results of Recent Research and Discovery. London: J. Murray.
- Cotterell, B. and J. Kamminga. 1990. *Mechanics of Pre-industrial Technology: An Introduction to the Mechanics of Ancient and Traditional Material Culture*. Cambridge: Cambridge University Press.
- Cottingham, J.P. 2002. The Asian free-reed mouth organs. *Journal of the Acoustical Society of America* 112 (5): 2365.
- Cousens, H. 1914. Buddhist stūpa at Mīrpur-Khās, Sind. Annual Report of the Archaeological Survey of India 1909-10: 80-92.
- Cowell, E.B. 2000 (reprint). *The Jataka, or Stories from the Buddha's Former Births.* New Delhi: Asian Educational Services.
- Dagens, B. 2003. Les Khmers. Paris: Les Belles Lettres.
- David, N. and C. Kramer. 2001. Ethnoarchaeology in Action. New York: Cambridge University Press.
- Davies, J.G. 1982. Temples, Churches and Mosques: A Guide to the Appreciation of Religious Architecture. Oxford: Blackwell.
- De, H. 1906-1907. A note on the word 'lankāro'. Journal of the Pâli Text Society 1906-7: 173.
- De Casparis, J.G. and I.W. Mabbett. 1992. Religion and popular beliefs of Southeast Asia before c. 1500, in N. Tarling (ed.) *The Cambridge History of Southeast Asia. Volume One. From Early Times to c. 1800*: 276-341. Cambridge: Cambridge University Press.
- De Foucaux, P.-E. (trans.) 1988. *Le Lalitavistara*. *L'histoire traditionnelle de la vie du Bouddha Çakyamuni* (Les classiques du bouddhisme mahāyāna 1). Paris: Les deux océans (réimpression de Leroux, 1884).
- Dehejia, V. 1988. The persistence of Buddhism in Tamilnadu, in P. Pal (ed.) *A Pot-Pourri of Indian Art*: 53-74. Bombay: Marg.
- Deloche, J. 1983. Études sur la circulation en inde: III. Le bateau de Tiruppuțaimarutūr. Bulletin de l'École Française d'Extrême-Orient 71: 1-11.

- Deloche, J. 1994. Transport and Communications in India Prior to Steam Locomotion. Volume II: Water Transport. Translated by J. Walker. Delhi: Oxford University Press.
- Deloche, J. 1996. Iconographic evidence on the development of boat and ship structures in India (2nd C BC-15th C AD): a new approach, in H.P. Ray and J.-F. Salles (eds) *Tradition and Archaeology: Early Maritime Contacts in the Indian Ocean*: 199-224. New Delhi: Manohar.
- Deuri, R.K. 1982. *The Sulungs*. Shillong: Government of Arunachal Pradesh.
- Dhanit Yupho. 1967. *Quartzite Buddha Images of the Dvāravatī Period*. Bangkok: The Department of Fine Arts.
- Diffloth, G. 2008. Shafer's parallels between Khasi and Sino-Tibetan, in S. Morey and M. Post (eds) *Northeast Indian Linguistics*: 93-104. New Delhi: Cambridge University Press.
- Doran, E. 1981. Wangka: Austronesian Canoe Origins. College Station: Texas A & M University Press.
- D'Orleans, H. 1894. Around Tonkin and Siam. London: Chapman and Hall.
- Dos Santos Alves, J.M. and P.-Y. Manguin. 1997. O Roteiro das cousas do Acem de D. João Ribeiro Gaio: Um olhar português sobre o nortde de Samatra em finais do século XVI. Lisbon: CNCDP.
- Dowling, N. 1992. The Javanization of Indian art. Indonesia 54: 117-138.
- Drakard, J. 1989. An Indian Ocean port: sources for the early history of Barus. Archipel 37: 53-82.
- Duan Yu. 1991. 商代蜀國青銅雕像文化來源和功能之再探討 [Further discussion about the cultural origin and function of bronze wares of the Shang Dynasty in ancient Shu]. 四川大學學報 [Journal of Sichuan University (Social Science Edition)] 1991 2: 97-106.
- Duan Yu. 1993. On the relations of the Bronze Culture with the Western Sichuan Plains in upper reaches of Yangtze River, eastern North China and world civilizations in Shang Dynasty. *Southeast Culture* 1: 1-22.
- Duan Yu (ed.) 1999. 政治結構與文化模式——巴蜀古代文明研究 [Political Structure and Culture Models: The Study of the Ancient Culture of Bashu]. Shanghai: Xuelin Press.
- Duan Yu. 2009. The source of seashells and ivory in southwest China. *Historical Research* 1: 1-19.
- Dupont, P. 1959. L'archéologie mône de Dvāravatī (Publications de l'École française d'Extrême-Orient 41). Paris: l'École française d'Extrême-Orient.
- Duroiselle, C. 1913-1914. The stone sculptures in the Ananda Temple at Pagan. Archaeological Survey of *India Annual Report 1913-14*: 63-97 and plates 31-39.
- Duroiselle, C. 1924. Wathundaye, the earth goddess of Burma. *Annual Report of the Archaeological Survey of India* 1921-22: 144-146.
- Eberhard, D.M., G.F. Simons and C.D. Fennig (eds). 2019. *Ethnologue: Languages of the World*. Twentysecond edition. Dallas: SIL International. Viewed 15 December 2019, http://www.ethnologue.com. Eck, W. 2003. *The Age of Augustus*. Oxford: Blackwell Publishing.
- Edwards McKinnon, E. 1988. Beyond Serandib: a note on Lambri at the northern tip of Aceh. *Indonesia* 46: 102-121.
- Edwards McKinnon, E. 1992. Ceramic recoveries (surface finds) at Lambaro, Aceh. Journal of East-West Maritime Relations 2: 63-73.
- Edwards McKinnon, E. 2006. Mediaeval landfall sites in Aceh, north Sumatra, in E.A. Bacus, I.C. Glover and V.C. Piggot (eds) *Uncovering Southeast Asia's Past. Selected Papers from the 10th International Conference of the European Association of Southeast Asian Archaeologists*: 325-334. Singapore: National University of Singapore Press.
- Ellen, R. 2001. Sharing, hoarding and theft: exchange and resistance in forager-farmer relations. *Ethnology* 40 (3): 193-211.
- Elvin, M. 2004. *The Retreat of the Elephants: An Environmental History of China*. New Haven: Yale University Press.

- Erkiletian, A.G. 2004. Metal casting, in A. Bostrom (ed.) *The Encyclopedia of Sculpture. Volume II*: 1068-1070. New York and London: Fitzroy Dearborn.
- Estioko-Griffin, A. and P.B. Griffin. 1981. Woman the hunter: the Agta, in F. Dahlberg (ed.) *Woman the Gatherer*: 18-32. New Haven: Yale University Press.
- Fang Guoyu. 1957. 雲南用貝作貨幣的年代及貝的來源 [Research on the origins and usage of seashells in Yunnan]. 雲南大學學報 [Journal of Yunnan University] 1957 12: 28-64.
- Fang Hao (ed.) 1987. 中西交通史 [The History of Sino-Foreign Communications]. Changsha: Yuelu Publishing House.
- Ferrand, G. (ed.) 1913-1914. Relations de voyage et texts géographique arabes, persians et turks, relatives a l'Éxtrême-Orient du VIIIe au XVIIIe siècles. Volumes 1-2. Reprint 1986. Paris: Leroux.
- Feugère, L. 1993. A wooden sculpture from Dunhuang in the Musée Guimet. *South Asian Archaeology* 1 (17): 207-212.
- Filliozat, J. 2003. *The Pathamasambodhi*. Oxford: Pali Text Society.
- Fine Arts Department. 2005. Saranya Suriyaratanakorn, Krisda Pinsri, Praphassrn Phosīthong. Phra Pathom: Chedi National Museum.
- Finsterbüsch, K. 1961. Die Mundorgeln des Museums für Völkerkunde zu Leipzig. Beiträge zur Völkerforschung, in D. Drost and W. König (eds) *Hans Damm zum 65. Geburtstag Museum für Völkerkunde Leipzig, Textband und Tafelband. Volumes 1-2*: 56-73. Berlin: Akademie-Verlag.
- Fischer, J. and P.F. de Cavalieri. 1932. *Claudii Ptolemaei Geographiae Codex Urbinas Graecus 82*. Leiden: Brill. Viewed at Wikimedia Commons, 'File:Ptonomy-World Vat Urb 82.jpg', 15 December 2019, <https://commons.wikimedia.org/wiki/File:Ptolemy-World_Vat_Urb_82.jpg>
- Flood, F.B. 2001. The Great Mosque of Damascus: Studies on the Makings of an Umayyad Visual Culture. Leiden-Boston-Köln: Brill.
- Fo Guang Shan. 2013-2019. New Book of Tang. Source: 'Wikisource, accessed 2018-06-04, https:// zh.wikisource.org/wiki/新唐書', viewed December 30, 2019, at http://chinesenotes.com/xintangshu.html.
- Fontein, J. 1990. Sculpture of Indonesia. New York: Harry N. Abrams, Inc.
- Fontein, J., R. Soekmono and S. Suleiman. 1971. *Ancient Indonesian Art of the Central and Eastern Javanese Periods*. New York: The Asiatic Society.
- Forbes, B., F. Stammler, T. Kumpula, N. Meschtyb, A. Pajunen, E. Kaarlejärvi and B.L. Turneret. 2009. High resilience in the Yamal-Nenets social-ecological system, west Siberian Arctic, Russia. *Proceedings of the National Academy of Sciences of the United States of America* 106 (52): 22041-22048.
- Fortier, J. 2014. Regional hunter-gatherer traditions in South-East Asia, in V. Cummings, P. Jordan and M. Zvelebil (eds) *The Oxford Handbook of the Archaeology and Anthropology of Hunter-gatherers*: 1010-1031. Oxford: Oxford University Press.
- Foucher, A. 1900. Étude sur l'iconographie bouddhique de l'Inde. Paris: Ernest Leroux.

Fournereau, L. 1890. Les Ruines khmères: Cambodge et Siam: Documents complémentaires d'architecture, de sculpture et de céramique. Paris: Ernest Leroux.

- Fournereau, L. 1895. *Le Siam ancien, première partie* (Annales du musée Guimet 27). Paris: Ernest Leroux.
- Fuller, D., L. Qin and E. Harvey. 2008. Evidence for the late onset of agriculture in the Lower Yangtze region and challenges for an archaeobotany of rice, in A. Sanchez-Mazas, R.M. Blench, M.D. Ross, I. Peiros and M. Lin (eds) *Human Migrations in Continental East Asia and Taiwan. Matching Archaeology, Linguistics and Genetics*: 40-83. London: Routledge.
- Gairola, K. 1956. Atlantes in Early Indian Art. Oriental Art (New Series) 11 (10): 138-142.
- Gamble, C. and W.A. Boismier (eds) 1991. *Ethnoarchaeological Approaches to Mobile Campsites: Huntergatherer and Pastoralist Case Studies*. Ann Arbor: International Monographs in Prehistory.
- Gangoly, O.C. 1943. The earth goddess in Buddhist Art. Indian Historical Quarterly 19: 1-11.
- Gangwar, A.K. and P.S. Ramakrishnan. 1990. Ethnobiological notes on some tribes of Arunachal Pradesh, Northeastern India. *Economic Botany* 44 (1): 94-105.

Gardner, G. 1976. Social Surveys for Social Planners. Milton Keynes: Open University Press.

- Garlake, P. and M. Garlake. 1964. Early ship engravings of the East African coast. *Tanganyika Notes and Records* 63: 197-206.
- Garzê Tibetan Autonomous Prefectural Cultural Center. 1983. Sichuan Yajiang Xiala Shiguan Zang Qingli Jianbao [The excavation of the stone cist burials at Xiala Commune, Yajiang County, Sichuan]. *Kaogu yu Wenwu* 4: 5-8.
- Gaston-Aubert, J.-P. 2010. Nāga Buddha images of the Dvāravatī Period: a possible link between Dvāravatī and Angkor. *Journal of the Siam Society* 98: 116-150.
- Gatellier, M. 1983: Les peintures du temple de Kelaniya à Srî Lankâ. Arts asiatiques 38: 49-70.
- Gatellier, M. 1991. *Peintures murales du Sri Lanka, école kandyenne, XVIII^e- XIX^e siècles* (Publications de l'École française d'Extrême-Orient 162). Paris: École française d'Extrême-Orient.
- Gerini, G.E. 1909. *Researches on Ptolemy's Geography of Eastern Asia (Further India and Indo-Malay Archipelago)*. London: Asiatic Society. Second edition 1974. New Delhi: Reprint Corporation.
- Ginsburg, H. 1989. Thai Manuscript Painting. London: British Library.
- Ginsburg, H. 2000. Thai Art and Culture. Historic Manuscripts from Western Collections. London: British Library.
- Ginsburg, H. 2005. Ayutthaya painting, in F. McGill (ed.) *The Kingdom of Siam. The Art of Central Thailand,* 1350-1800: 95-102. San Francisco/Ghent/Bangkok: Asian Art Museum/Snoeck/Buppha Press.
- Giteau, M. 1965. Les Khmers: sculptures khmères, reflets de la civilisation d'Angkor. Fribourg: Office du Livre.
- Giteau, M. 1967. Note sur les frontons du sanctuaire central de Vatt Nagar. *Arts asiatiques* 16: 125-139.
- Glidden, H.W. 1942. A comparative study of the Arabic nautical vocabulary from Al-'Aqabah, Transjordan. *Journal of the American Oriental Society* 62 (1): 68-72.
- Glover, I.C. 1996. The archaeological evidence for early trade between India and Southeast Asia, in J. Reade (ed.) *The Indian Ocean in Antiquity*: 365-400. London: Kegan Paul International.
- Glover, I.C., M. Yamagata and W. Southworth. 1996. The Cham, Sa Huynh and Han in early Vietnam: excavations at Buu Chau Hill, Tra Kieu, Quang Nam Da Nang Province, Vietnam 1993. *Bulletin of the Indo-Pacific Prehistory Association* 14 (1): 166-176.
- Gogoi, P. 1996. Tai of North-East India. Assam: Chumpra Publications.
- Goloubev, V. 1929. L'age du bronze au Tonkin et dans le nord d'Annam. Bulletin École française Extrême-Orient 29: 1-46.
- Golzio, K-H. (ed.) 2004. Inscriptions of Campā Based on the Editions and Translations of Abel Bergaigne, Étienne Aymonier, Louis Finot, Édouard Huber and other French Scholars and of the Work of R.C. Majumdar. Newly Presented, with Minor Corrections of Texts and Translations, Together with Calculations of Given Dates. Aachen: Shaker Verlag.
- Gombrich, E. 1998. Style, in D. Preziosi (ed.) *The Art of Art History: A Critical Anthology*: 150-165. Oxford: Oxford University Press.
- Gould, R.A. (ed.) 1978. Explorations in Ethnoarchaeology. Albuquerque: University of New Mexico Press.
- Grabar, O. 1987. The Formation of Islamic Art. New Haven and London: Yale University Press.
- Greenhill, B. 1957. The boats of East Pakistan: a preliminary study. *The Mariner's Mirror* 43 (2): 106-134, 43 (3): 203-215.
- Griffin, P.B. 1984. Forager resource and land use in the humid tropics: the Agta of northeastern Luzon, the Philippines, in C. Schrire (ed.) *Past and Present in Hunter-gatherer Studies*: 95-121. Orlando: Academic Press.
- Griffin, P.B. and Estioko-Griffin, A. 1978. Ethnoarchaeology in the Philippines. Archaeology 31 (6): 34-43.
- Griffin, P.B. and A. Estioko-Griffin. 1985. *The Agta of Northeastern Luzon: Recent Studies*. Cebu City: University of San Carlos.
- Grünwedel, A. 1897. Die Skulpturen aus Pagan. Veröffentlichungen aus dem Königlichen Museum für Völkerkunde V, Band 4. Berlin: W. Spemann.
- Guangsheng, F. 2000. Winds, in J.F. So (ed.) *Music in the Age of Confucius*: 87-99. Washington D.C.: Smithsonian Institution.

- Guillon, E. 1985. L'armée de māra: au pied de l'Ānanda (Pagán-Birmanie) (Mémoire, Editions recherches sur les civilisations 60). Paris: Editions recherches sur les civilisations.
- Guillon, E. 1987. A propos d'une version mône inédite de l'épisode de Vasundharā, *Journal Asiatique* 275: 143-162.
- Guillot, C. and L. Kalus. 2008. *Les monuments funéraires et l'histoire du Sultanat de Pasai à Sumatra* (Cahiers d'Archipel 37). Paris: Association Archipel.
- Guillot, C., M.-F. Dupoizat, Untung Sunaryo, D. Perret and Heddy Surachman. 2008. *Barus: Seribu Tahun Yang Lalu* (Sejarah Barus 2). Translated by A.S. Fanani. Jakarta: Kepustakaan Populer Gramedia.
- Gunn, M. 1997. The development of social networks: subsistence production and exchange between the sixth and sixteenth century AD in the Tanjay, Negros Oriental, Philippines. Unpublished PhD dissertation, University of Hawai'i.
- Guo Moruo (ed.) 1930 (1964). 中國古代社會研究 [Studies on Ancient Chinese Society]. Beijing: People's Publishing House.
- Gurukkal, R. 1993. Towards the voice of dissent: trajectory of ideological transformation in early South India. *Social Scientist* 236-237: 2-22.
- Guthrie, E. 2004. A study of the history of the Buddhist Earth deity in Mainland Southeast Asia. Unpublished PhD dissertation, University of Canterbury.
- Gutman, P. 1979. Buddha. Images of Arakan. Art and Archaeology Research Papers June 1979: 48-56.
- Gutman, P. 2001. Burma's Lost Kingdoms: Splendors of Arakan. Bangkok: Orchid Press.
- Haddon, A.C. and J. Hornell. 1936. Canoes of Oceania. Volume 1. Honolulu: Bishop Museum Press.
- Haebler, C. 1965. Ein nautischer Ausdruck im Pāli (Pā. lakāra-). Zeitschrift für vergleichende Sprachforschung auf dem Gebiete der indogermanischen Sprachen 79: 112-122.
- Hall, D.G.E. 1981. A History of Southeast Asia. London: Macmillan Press Ltd.
- Hall, K.R. 1985. Maritime Trade and State Development in Early Southeast Asia. Honolulu: University of Hawai'i Press.
- Hall, K.R. 1992. Economic history of early southeast Asia, in N. Tarling (ed.) *The Cambridge History of Southeast Asia. Volume 1*: 183-275. Cambridge: Cambridge University Press.
- Hamilton, H.C. and W. Falconer (trans). 1903. Strabo, Geography. London: George Bell and Sons.
- Handley, F.J.L. 2011. Textiles: a preliminary report, in D. Peacock and L. Blue (eds) *Myos Hormos-Quseir al-Qadim: Roman and Islamic Ports on the Red Sea. Volume 2: Finds from the Excavations 1999-2003:* 321-333. Oxford: Archaeopress.
- Harich-Schneider, E. 1973. A History of Japanese Music. London: Oxford University Press.
- Harvey, G.E. and R.C. Temple. 2008. History of Burma. Delhi: Cosmo Publications.
- Hazarika, M. 2017. Prehistory and Archaeology of Northeast India: Multidisciplinary Investigation in an Archaeological Terra Incognita. Oxford: Oxford University Press.
- Headland, T. and L. Reid. 1989. Hunter-gatherers and their neighbors from prehistory to the present. *Current Anthropology* 30 (1): 43-66.
- Headland, T. and L. Reid. 1991. Holocene foragers and interthnic trade: a critique of the myth of isolated independent hunter-gatherers, in S. Gregg (ed.) *Between Bands and State* (Southern Illinois University Papers No. 9): 333-340. Carbondale: Center for Archaeological Investigations.
- Heath, S. 1909. The Romance of Symbolism, and Its Relation to Church Ornament and Architecture. London: Francis Griffiths.
- Heine-Geldern, R.V. 1951. Das Trocharerproblem und die pontische Wanderung. *Saeculum* 2: 225-255.
- Higham, C. 2002. Early Cultures Of Mainland Southeast Asia. Bangkok: River Books. Higham, C. 2014 Early Mainland Southeast Asia. From First Humans to Angkor. Bangkok: River Books.
- Higham, C.F.W. and T. Higham. 2009. A new chronological framework for prehistoric Southeast Asia,
- based on a Bayesian model from Ban Non Wat. Antiquity 83: 125-144.

Higham, C. and R. Thosarat. 2012. *Early Thailand: From Prehistory to Sukhothai*. Bangkok: River Books. Hillenbrand, R. 1994. *Islamic Architecture – Form, Function and Meaning*. Edinburgh: Edinburgh University Press. Hi Zhihui and Chen Kejiong. 1996. 左传 Zuo Zhuan. Changsha: Hunan renmin chubanshe.

- Hongo, H., N. Ishiguro, T. Watanabe, N. Shigehara, T, Anezaki, V.T. Long, D.V. Binh, N.T. Tien and N.H. Nam. 2002. Variation in mitochondrial DNA of Vietnamese pigs: relationships with Asian domestic pigs and Ryukyu wild boars. *Zoological Science* 19 (11): 1329-1335.
- Hoogervorst, T.G. 2013. Southeast Asia in the Ancient Indian Ocean World. Oxford: Archaeopress.
- Hoogervorst, T.G. 2018. Sailors, tailors, cooks, and crooks: on loanwords and neglected lives in Indian Ocean ports. *Itinerario* 42 (3): 516-548.
- Hornell, J. 1939-1940. The frameless boats of the Middle Nile. *The Mariner's Mirror* 25 (4): 417-432; 26 (2): 125-144.
- Hornell, J. 1941. The sea-going Mtepe and Dáu of the Lamu Archipelago. The Mariner's Mirror 27 (1): 54-68.

Horridge, A. 1986. The Prahu: Traditional Sailing Boat of Indonesia. Singapore: Oxford University Press.

- Horridge, A. 2008. Origins and relationships of Pacific canoes and rigs, in A. Di Piazza and E. Peartree (eds) *Canoes of the Grand Ocean*: 85-105. Oxford: Archaeopress.
- Hourani, G.F. 1995. *Arab Seafaring in the Indian Ocean in Ancient and Early Medieval Times.* Renewed edition. Princeton: Princeton University Press.
- Huntingford, G.W.B. (trans.) 1980. The Periplus of the Erythrean Sea. London: The Hakluyt Society.
- Hutterer, K.L. 1976. An evolutionary approach to the Southeast Asian cultural sequence. *Current Anthropology* 2: 221-242.
- Hutterer, K.L. 1977. Reinterpreting the Southeast Asian paleolithic, in J. Allen, J. Golson and R. Jones (eds) *Sunda and Sahul*: 31-71. London: Academic Press.
- Hutterer, K.L. 1983. The natural and cultural history of Southeast Asian agriculture: ecological and evolutionary aspects. *Anthropos* 78: 169-212.
- Hutterer, K.L. 1988. The prehistory of the Asian rainforests, in J.S. Denslow and C. Padoch (eds) *People of the Tropical Rain Forest*: 63-72. Berkeley: University of California Press.
- Hutterer, K.L. and W. Macdonald (eds) 1982. *Houses Built on Scattered Poles: Prehistory and Ecology in Negros Oriental, Philippines.* Cebu City: University of San Carlos Press.
- Hutton, J.H. 1922. The meaning and method of erection of monoliths of the Naga tribes. *Journal of the Royal Anthropological Institute* 52: 242-249.
- Hyewon. 1805. *Hyewon pungsokdo*. Gansong Art Museum, Seoul. 'File:Hyewon-Cheongru.soil.jpg' viewed 27 December 2019, < https://en.wikipedia.org/wiki/Saenghwang#/media/File:Hyewon-Cheongru. soil.jpg>.
- Igunma, J. 2008. Human body, spirit and disease: the science of healing in 19th century Buddhist manuscripts from Thailand. *The Journal of the International Association of Buddhist Universities* 1: 120-133.
- Igunma, J. (ed.) 2010. A Guardian of Thai Treasures: Henry Ginsburg (1940-2007). London: British Library.
- Ingholt, H. 1957. Gandhāran Art in Pakistan. New York: Pantheon Books.
- Innes Millar, J. 1969. The Spice Trade of the Roman Empire 29 B.C. to A.D. 641. Oxford: Clarendon Press.
- International Hydrographic Organization. 1953. *Limits of Oceans and Seas* (Special Publication 23). Third Edition. Monte Carlo: Imp. Monégasque.
- Isnaeni, H. 1996. The Javanese mosque, a regional interpretation of form and mystical concepts. Unpublished PhD dissertation, University of Melbourne.
- Jain, R. 2011. The Art of Indian Textiles. New Delhi: Niyogi Books.
- Jambi Archaeological Heritage Conservation Centre (ed.). 2012. Kawasan Percandian, Muara Jambi. (English translation). Jambi: Balai Pelestarian Peninggaina Purbakala Jambi.
- Jayawickrama, N.A. (trans.) 1990. The Story of Gotama Buddha, The Nidāna-kathā of the Jātakatthakathā. Oxford: The Pali Text Society.
- Jin Zhengyao. 1995. 廣漢三星堆遺物坑青銅器的鉛同位素比值研究 [A study of the lead isotope ratios of the Sanxingdui burial pit bronzes]. 文物 [*Cultural Relics*] 1995 2: 80-85.
- Jones, D. 1978. Surface, pattern and light, in G. Mitchell (ed.) *Architecture of the Islamic World: Its History and Social Meaning:* 161-175. London: Thames and Hudson Ltd.

- Junker, L.L. 1990. The organization of intra-regional and long-distance trade in prehispanic Philippine complex societies. *Asian Perspectives* 29 (2): 167-209.
- Junker, L. 1993. Archaeological excavations at the 12th-16th century settlement of Tanjay, Negros Oriental: the burial evidence for social status-symbolism, head-taking and inter-polity raiding. *Philippine Quarterly of Culture and Society* 21: 39-82.
- Junker, L.L. 1994. Trade competition, conflict, and political transformations in sixth- to sixteenthcentury Philippine chiefdoms. *Asian Perspectives* 33 (2): 229-260.
- Junker, L.L. 1996. Hunter-gatherer landscapes and lowland trade in the prehispanic Philippines. *World Archaeology* 27 (3): 389-410.
- Junker, L.L. 1999. *Raiding, Trading, and Feasting: The Political Economy of Philippine Chiefdoms*. Quezon City: Anteneo De Manila University Press.
- Junker, L.L. 2002a. Economic specialization and inter-ethnic trade between foragers and farmers in prehispanic Philippines, in K. Morrison and L. Junker (eds) *Forager-traders in South and Southeast Asia: Long-term Histories*: 203-241. Cambridge: Cambridge University Press.
- Junker, L.L. 2002b. Introduction, in K. Morrison and L. Junker (eds) *Forager-traders in South and Southeast Asia: Long-term Histories:* 133-166. Cambridge: Cambridge University Press.
- Junker, L.L. 2002c. Long-term change and short-term shifting in the economy of Philippine foragertraders, in B. Fitzhugh and J. Habu (eds) *Beyond Foraging and Collecting. Evolutionary Change in Huntergatherer Settlement Systems* (Fundamental Issues in Archaeology Series): 339-386. New York: Springer Science+Business Media.
- Junker, L.L. 2004. Political economy in the historic period chiefdoms and states of Southeast Asia, in G.M. Feinman and L.M. Nicholas (eds) *Archaeological Perspectives on Political Economies*: 223-251. Salt Lake City: University of Utah Press.
- Junker, L. and L. Smith. 2017. Farmer and forager interactions in Southeast Asia, in J. Habu, P. Lape and J. Olsen (eds) *Handbook of East and Southeast Asian Archaeology*: 619-632. New York: Springer Link.
- Kapitän, G. 2009. Records of Traditional Watercraft from South and West Sri Lanka. Oxford: Archaeopress.
- Karlgren, B. 1950. The Book of Odes. Stockholm: Museum of Far Eastern Antiquities.

Karomatov, F.M., V.A. Meskeris and T.S. Vyzgo. 1987. Mittelasien. Leipzig: VEB.

- Keightley, D.N. 1978. Sources of Shang History: The Oracle-bone Inscriptions of Bronze Age China. Berkeley: University of California Press.
- Kent, S. 1984. *Analyzing Activity Areas: An Ethnoarchaeological Study of the Use of Space.* Albuquerque: University of New Mexico Press.
- Kentley, E. 1996. The sewn boats of India's east coast, in H.P. Ray and J.-F. Salles (eds) *Tradition and Archaeology: Early Maritime Contacts in the Indian Ocean*: 247-260. New Delhi: Manohar.
- Kévonian, K. 1998. Un itinéraire arménian de la mer de Chine, in C. Guillot (ed.) *Histoire de Barus (Sumatra): Le site de Lobu Tua. Tome I, Études et documents* (Cahiers d'Archipel 30): 35-117. Paris: Association Archipel.
- Kinney, A.R. 2003. Worshipping Siva and Buddha, the Temple Art of East Java. Honolulu: University of Hawai'i Press.
- Kish, G. 1978. The Source Book in Geography. Cambridge: Harvard University Press
- Klokke, M.J. 1994. The iconography of the so-called portrait statues in late East Javanese art, in M.J. Klokke and P. Lunsingh Scheurleer (eds) *Ancient Indonesian Sculpture*: 178-202. Leiden: KITLV Press.
- Koentjaraningrat, R.M. 1990. Javanese Culture. Singapore: Oxford University Press.
- Koestoro Lukas Partanda and Wiradniyna Ketut. 2007. *Megalithic Traditions in Nias Island. North Sumatra Heritage* (Series No. 0105). Medan: Medan Archaeological Office.
- Krairiksh, P. 2012. The Roots of Thai Art. Translated by N. Chakrabongse. Bangkok: River Books.
- Kramrisch, S. 1940. Pala and Sena sculpture. Rupam 40: 107-126.
- Krom, N.J. 1919, 1923. Inleiding tot de Hindoe-Javaansche Kunst [Introduction to Hindu-Javanese Art], Volumes 1 and 2. The Hague: Martinus Nijhoff.

- Krom, N.J. 1974. The Life of the Budda on the Stūpa of Borobudur According to the Lalitavistara-Text. Varanasi: Bharatiya Publishing House.
- Kulke, H. 1977. Early state formation and royal legitimation in late ancient Orissa, in M.N. Das (ed.) *Sidelights on History and Culture of Orissa*: 104-114. Cuttack: Vidyapuri.
- Kulke, H. 1986. The early and the imperial kingdom in Southeast Asian history, in D.G. Marr and A.C. Milner (eds) *Southeast Asia in the Ninth to Fourteenth Centuries*: 1-22. Singapore: Institute of Southeast Asian Studies.
- Kulke H. 1990. Indian colonies, Indianization, or cultural convergence? Reflections on the changing image of India's role in South-East Asia, in H. Schulte Nordholte (ed.) *SEMAIAN 3* (Vakgroep Talen in Culturen van Zuidoost Azië en Oceanië): 8-32. Leiden: Rijksuniversiteit.
- Kurz, J.L. 2011. Boni in Chinese Sources: Translations of Relevant Texts from the Song to the Qing Dynasties (Nalanda-Sriwijaya Centre Working Paper Series 4). Singapore: Institute of Southeast Asian Studies.
- Kusno, A. 2003. "The Reality of One-Which-Is-Two" mosque battles and other stories: notes on architecture, religion, and politics in the Javanese world. *Journal of Architectural Education* 57 (1): 57-67.
- Lam Thi My Dzung. 1998. The Sa Huỳnh Culture in Hội An, in M.J. Klokke and T. De Bruijn (eds) *Southeast Asian Archaeology 1996. Proceedings of the 6th International Conference of the European association of Southeast Asian Archaeologists, Leiden, 2-6 September 1996*: 13-25. Hull: University of Hull Centre for Southeast Asian Studies.
- Lam Thi My Dzung. 2011. Central Vietnam during the period from 500 BCE to CE 500, in P.-Y. Manguin, A. Mani and G. Wade (eds) *Early Interactions between South and Southeast Asia: Reflections on Cross-Cultural Exchange*: 3-15. Singapore: Nalanda Sriwijaya Centre, Institute of Southeast Asian Studies.
- Lam Thi My Dzung and Nguyen Duc Minh. 1997. Nhung di tich mo chum Sa Huỳnh va di tich Cham co o Hội An [Jar burials of the Sa Huỳnh culture and the ancient Cham sites in Hội An]. *Khao Co Hoc* 3: 66-74.
- Lape, P.V., S. O'Connor and N. Burningham. 2007. Rock art: a potential source of information about past maritime technology in the South-east Asia-Pacific region. *The International Journal of Nautical Archaeology* 36 (2): 238-253.
- Leclère, A. 1906. *Les Livres sacrés du Cambodge, 1ère partie* (Annales du Musée Guimet. Bibliothèque d'études 20). Paris: Musée Guimet.
- Lee, H.S. 2001. Arabic calligraphy as an illustrative tool for religious and applied art in modern Kuwait. Unpublished MA dissertation, Syracuse University.
- Leoshko, J. 1988a. Buddhist images from Telhara. South Asian Studies 4: 89-97.
- Leoshko, J. 1988b. The case of the two witnesses to the Buddha's enlightenment, in P. Pal (ed.) *A Pot-Pourri of Indian Art*: 40-52. Mumbai: Marg.
- Lieberman, V. 2009. *Strange Parallels, Southeast Asia in Global Context, c. 800-1300. Volume 2.* Cambridge: Cambridge University Press.
- Liebner, H. 1993. Remarks on the terminology of boatbuilding and seamanship in some languages of southern Sulawesi. *Indonesia Circle* 59-60: 18-44.
- Liebner, H. 2014. The Siren of Cirebon. A tenth-century trading vessel lost in the Java Sea. Unpublished PhD dissertation, University of Leeds.
- Li Jiarui. 1956. 古代雲南用貝幣的大概情形 [The general situation regarding the use of seashells in ancient Yunnan]. 歷史研究 [Historical Research] 9: 85-100.
- Linnaeus, C. 1758. Systema naturae per regna tria naturae, secundum classes, ordines, genera, species, cum characteribus, differentiis, synonymis, locis. Tomus I. Editio decima, reformata. Holmiae. (Laurentii Salvii).
- Liu Jian, Zhu Mingzhong and Ge Weijun. 2004. India Civilization. Beijing: China Social Sciences Press.
- Liu Lin (ed.) 1984. 華陽國志校注 [Annotated Edition of Records of the Huayang State]. Chengdu: Bashu Publishing House.
- Liu, X., H. Hunt and M.K. Jones. 2009. River valleys and foothills: changing archaeological perceptions of North China's earliest farms. *Antiquity* 83: 82-95.

- Li Xueqin. 2007. 三星堆與南方絲綢之路青銅文化研討會論文集序 [Preface to the second volume of articles from the Symposium on Bronze Culture of Sanxingdui and the Silk Road in the South, Guanghan Sanxingdui Research Institute/Museum, Sichuan, 28-29 April 2007] in 三星堆研究 [Sanxingdui Research] Volume 2: 1-2. Beijing: Cultural Relics Press.
- Lohuizen-de Leeuw, J.E. 1961. The 'Stone Buddha' of Chiang Mai and its inscription. *Artibus Asiae* 24: 324-329.
- Lombard, D. 2006. *Kerajaan Aceh Zaman Sultan Iskandar Muda (1607-1636)*. Jakarta: KPG École Français d'Extreme Orient. (Reprint and translation of 1967 *Le sultanat d'Aceh au temps d'Iskandar Muda (1607-1636)*).
- Longhurst, A.H. 1938. *The Buddhist Antiquities of Nāgārjunakonda, Madras Presidency* (Memoirs of the Archaeological Survey of India 54). Delhi: Manager of Publications.
- Loofs, H.H.E. 1967. *Elements of the Megalithic Complex in Southeast Asia: An Annotated Bibliography* (Oriental Monograph Series 3). Canberra: Centre for Oriental Studies in Association with Australian National University Press.
- Luang Boribal Buribhand. 2490 (1947). Wichan phraphuttharup sila nai viharn noi wat na phramen changwat phranakhorn sri ayutthaya [Critical essay regarding the stone Buddha from the Vihāra at Wat Na Phra Men, Ayutthaya]. *Silpakorn Journal* 1 (1): 41-52.
- Luce, G.H. 1969-1970. *Old Burma Early Pagán. Volumes 1-3.* New York: J.J. Augustin for Artibus Asiae and the Institute of Fine Arts, New York University.
- Luce, G.H. 1985. Phases of Pre-Pagan Burma: Languages and History. Volumes 1-2. New York: Oxford University Press.
- Lunsingh Scheurleer, P. 2008. The well-known Javanese statue in the Troppenmuseum, Amsterdam, and its place in Javanese sculpture. *Artibus Asiae* 68 (2): 287-332.
- Luo, Z. 1912. Yinxu shuqi qianbian 殷虚書契前編 [Documents from Yin sites, part I]. Shangyu Luo Zhenyu Yongmuyuan 上虞羅振 玉永慕園.
- Lyons, I. and H. Ingholt. 1971 (1957), reprint. *Gandhāran Art in Pakistan*. New Haven: The Connecticut Academy of Arts and Sciences.
- Mabbett, I.W. 1977. The 'Indianization' of Southeast Asia: reflections on the historical sources. *Journal of Southeast Asian Studies* 8 (2): 143-161.
- Maceda, M.N. 1962. Urgent research among the Negritos of the Philippines, especially among the southern groups. *Bulletin of the International Committee on Urgent Anthropological and Ethnological Research* 5: 29-31.
- MacKay, E.J.H. 1931. Ivory, shell, faience and other objects of technical interest, in J.H. Marshall (ed.) Mohenjo-daro and the Indus Civilization. Being an Official Account of Archaeological Excavations at Mohenjodaro carried out by the Government of India between the Years 1922 and 1927: 562-588. London: Arthur Probsthain.
- Madjid, N. 2002. Sidrat Al-Muntaha. Pintu-Pintu Menuju Tuahn. Volume VI. Jakarta: Paramadina.
- Mahdi, W. 1999. The dispersal of Austronesian boat forms in the Indian Ocean, in R. Blench and M. Spriggs (eds) *Archaeology and Language III: Artefacts, Languages, and Texts*: 144-179. London: Routledge.
- Mahdi, W. 2017. Pre-Austronesian origins of seafaring in insular Southeast Asia, in A. Acri, R. Blench and A. Landman (eds) *Spirits and Ships: Cultural Transfers in Early Monsoon Asia*: 325-374. Singapore: Institute of Southeast Asian Studies.
- Majumdar N.G. 1937. A Guide to the Sculptures in the Indian Museum: Part 2: The Graeco-Buddhist School of Gandhara. Delhi: Manager of Publications.
- Majumdar, R.C. 1985 (1927), reprint. Champa: History and Culture of an Indian Colonial Kingdom in the Far East 2nd to 16th centuries AD. Delhi: Gian Publishing House.
- Malalasekera, G.P. 1974. Dictionary of Pāli Proper Names. London and Boston: Routledge and Kegan Paul.
- Malandra, G.H. 1988. The Mahabodhi Temple, in J. Leoshko (ed.) *Bodhgaya, The Site of Enlightenment*: 9-28. Mumbai: Marg Publications.

- Malleret, L. 1959. L'archéologie du delta du Mékong. Tome 1. L'exploration archéologique et les fouilles d'Oc-Èo. Paris: École Française d'Extrême-Orient.
- Malleret, L. 1960. L'archéologie du delta du Mékong. Tome 2. La civilisation matérielle d'Oc-Èo. Paris: École Française d'Extrême-Orient.
- Manguin, P.-Y. 1980. The Southeast Asian ship: an historical approach. *Journal of Southeast Asian Studies* 11: 266-276.
- Manguin, P.-Y. 1985. Late Medieval Asian shipbuilding in the Indian Ocean: a reappraisal. *Moyen Orient et Océan Indien* 2 (2): 1-30.
- Manguin, P.-Y. 1993. Trading ships of the South China Sea: shipbuilding techniques and their role in the history of the development of Asian trade networks. *Journal of the Economic and Social History of the Orient* 36 (3): 253-280.
- Manguin, P.-Y. 1996. Southeast Asian shipping in the Indian Ocean during the first millennium AD, in H.P. Ray and J.-F. Salles (eds) *Tradition and Archaeology: Early Maritime Contacts in the Indian Ocean*: 181-198. New Delhi: Manohar.
- Manguin, P.-Y. 2012. Asian ship-building traditions in the Indian Ocean at the dawn of European expansion, in O. Prakash and D.P. Chattopadhyaya (eds) *History of Science, Philosophy and Culture in Indian Civilization. Volume III, Part 7: The Trading World of the Indian Ocean, 1500-1800: 597-629.* Delhi, Chennai and Chandigarh: Pearson.
- Marak, Q. 2012. Megaliths, types and its living traditions among the Jaintias of Meghalaya, India. *Bulletin* of the Indo-Pacific Prehistory Association 32: 45-53.
- Marchal, H. 1939. La collection khmère: Musée Louis Finot. Hanoi: École Française d'Extrême-Orient.
- Marchal, H. 1951. Le décor et la sculpture khmers. Paris: Van Œst.
- Maringer, J. 1980. Das bronzene Dong-So'n Schiff vom Berg Dobo auf Flores, Indonesien. Beiträge zur Allgemeinen und Vergleichenden Archäologie 2: 109-113.
- Marrison, G.E. 1967. The classification of the Naga languages of north-east India. Volumes 1-2. Unpublished PhD dissertation, University of London.
- Marwoto, I. 2003. Seni Dekoratif Pada Bangunan di Pantai Utara Jawa abad Ke 15-17: Suatu Masalah Penanda Ke-Islaman. [Decorative art in northern Javanese coast construction from the 15 to 17th centuries: an Islamic indicator]. Unpublished PhD dissertation, University of Indonesia, Depok.
- Masamune, A. 1927. Shinzei kogakuzu [信西古樂圖]. Tōkyō: Nihon Koten Zenshū Kankōkai, Shōwa 2.
- Mascuñana, R.V. 1997. Anthro-historiographic notes on the indigenous peoples of Negros Oriental: recent findings. *Silliman Journal* 38: 23-54.
- Masjid. 2000. CD2000 format. MMI, Hak Cipta dilindungi undang-undang. Bandung: Institute of Technology.
- May, A. (ed.) 1998. Indonesian Ornamental Design. Amsterdam: The Pepin Press.
- Mayurie Veraprasert. 1995. Tablettes votives bouddhiques de la période de Dvāravatī découvertes à Nadun, Mahasarakham, in *Premier Symposium Franco-Thaï. La Thaïlande des débuts de son histoire au XVéme siècle (18-20 juillet 1988), Université de Silpākorn*: 222-235. Bangkok: University of Silpākorn.
- McCall, G. 2012. Ethnoarchaeology and the organization of lithic technology. *Journal of Archaeological Research* 20 (2): 157-203.
- McGrail, S. 2001. Boats of the World: From the Stone Age to Medieval Times. Oxford: University of Oxford Press.
- McIntosh, L.S. 2012. Art of Southeast Asian Textiles, the Tilleke and Gibbins Collection. Chicago: Serindia Publications.
- Meilianda, E. 2009. Past, present and future morphological development of a tsunami-affected coast. A case study of Banda Aceh. Unpublished PhD dissertation, University of Twente, Enschede.
- Meltzner, A.J., K. Sieh, H.-W. Chiang, C.-C. Shen, B.W. Suwargadi, D.H. Natawidjaja, B.B. Philibosian, R.W. Briggs and J. Galetzka. 2010. Coral evidence for earthquake recurrence and an AD 1390-1455 cluster at the south end of the 2004 Aceh-Andaman rupture. *Journal of Geophysical Research* 115 (B10402): 1-46.

- Meng Wentong (ed.). 1981. 巴蜀古史論述 [On the History of Ancient Ba-Shu]. Chengdu: Sichuan People's Publishing House.
- Mersenne, M. 1636. Harmonie Universelle. Paris: Sebastien Cramoisy.
- Miksic, J. 2010a. The A to Z of Ancient Southeast Asia. Plymouth: Scarecrow Press, Inc.

Miksic, J 2010b. *The Buddhist-Hindu Divide in Premodern Southeast Asia* (Nalanda-Srivijaya Centre Working Paper Series No. 1). Singapore: Institute of Southeast Asian Studies.

Milanesi, M. 1996. A forgotten Ptolemy: Harley codex 3686 in the British Library. *Imago Mundi* 48 (1): 43-64. Miller, T.E. 1980. *An Introduction to Playing the Kaen*. Kent: Terry E. Miller (World Music Enterprises).

Miller, T.E. 1981. Free-reed instruments in Asia: a preliminary classification, in T. Noblitt (ed.) *Music East and West: Essays in Honor of Walter Kaufmann*: 63-99. New York: Pendragon Press.

- Miller, T.E. 1985. *Traditional Music of the Lao: Kaen Playing and Mawlum Singing in Northeast Thailand* (Contributions in Intercultural and Comparative Studies 13). Westport: Greenwood Press.
- Miller, T.E. 1991. *An Introduction to Playing the Kaen.* Revised edition. Kent: Terry E. Miller (World Music Enterprises).

Mills, J.V.G. (ed. and trans.) 1970 (1997). *Ma Huan: Ying-yai Sheng-lan: 'The Overall Survey of the Ocean's Shores'* (1433). Cambridge: Cambridge University Press. (Reprinted Bangkok: White Lotus Press).

Mills, J.V.G. 1974. Arab and Chinese navigators in Malaysian waters in about A.D. 1500. *Journal of the Malay Branch of the Royal Asiatic Society* 47 (2): 1-82.

Mills, J.V.G. 2007. Arab and Chinese navigators in Malaysian waters in about A.D. 1500, in G. Wade (ed.) *Southeast Asia-China Interactions: Reprints of Articles from the Journal of the Malaysian Branch, Royal Asiatic Society*: 409-488. Singapore: National University of Singapore Press.

Misra, V.N. and P. Bellwood. 1985. *Recent Advances in Indo-Pacific Prehistory*. New Delhi: Oxford and IBH Publishing Co.

Mitchiner, M. 1998. The History and Coinage of South East Asia until the Fifteen Century. London: Hawkins.

MKED (Mon Khmer Etymological Dictionary), no date (2007-2011), dirs P. Sidwell and D. Cooper (after Shorto 2006), viewed 30 November 2019, http://sealang.net/monkhmer/dictionary/.

Modi, M. 2008. *The Millangs*. Itanagar/New Delhi: Himalayan Publishers.

Mok, R. 1978. Ancient musical instruments unearthed in 1972 from the Number One Han tomb at Ma Wang Tui, Changsa: translation and commentary. *Asian Music* 10 (1): 39-91.

Montana, S. 1997. Nouvelles données sur les royumes de Lamuri et Barat. Archipel 53: 85-95.

Mookerji, R.K. 1957. *Indian Shipping: A History of the Sea-borne Trade and Maritime History of the Indians from the Earliest Times.* Second edition. Bombay, Calcutta and Madras: Orient Longmans.

Moore, E. and Smitthi Siribhadra. 1992. *Palaces of the Gods*. Bangkok: River Books.

Morey, S. 2005. The Tai Languages of Assam – A Grammar and Texts. Canberra: Pacific Linguistics.

- Morrison, K.D. and L.L. Junker. 2002. Forager-traders in South and Southeast Asia: Long-term Histories. Cambridge: Cambridge University Press.
- Mudar, K. 1997. Patterns of animal utilization in the Holocene of the Philippines: a comparison of faunal samples from four archaeological sites. *Asian Perspectives* 36 (1): 67-105.

Mu Genlai, Wen Jiang and Huang Zhuohan (eds and trans) 1983. 中國印度見聞錄 [Akhbār al-Sīn wa'l-Hind]. Beijing: Chinese Publishing House.

- Naengnoi Punjabhan (ed.) 1992 (2535 B.E.). *The Art of Thai Wood Carving: Sukhothai, Ayutthaya, Ratanakosin.* Bangkok: Rerngrom.
- Napat Sirisambhand and A. Gordon. 2001. Seeking Thai gender history: using historical murals as a source of evidence. *International Institute for Asian Studies Newsletter* 24: 23.

Naudou, J. 1973. Bouddha. Paris: Somogy.

- Needham, J. 1980. Science and Civilization in China. Volume 4. Physics and Physical Technology. Part III. Civil Engineering and Nautics. Cambridge: Cambridge University Press.
- Nguyen Kim Dung, Nguyen Tien Dong and Bui Van Hieu. 2003. Excavations at Go Cam 2001-2002. New Archaeological Discoveries in Vietnam 2002: 186-190.

Noe'man, A. 2005. Designing mosques in Indonesia. Unpublished manuscript.

Nooteboom, C. 1950–1951. Sumatra en de zeevaart op de Indische Oceaan. Indonesië 4: 119-127.

Nooteboom, C. 1952. Galeien in Azië (met platen). *Bijdragen tot de Taal-, Land- en Volkenkunde* 108 (4): 365-380. Nurdin. 2019. Ditemukan objek di duga benda cagar budaya berbentuk Kepala Budha, oleh staf Dinas

- Kebudayaan dan Pariwisata Provinsi Aceh, viewed at Website 'Indonesiana Platform Kebudayaan', 5 January 2020, .
- Oey, G.P. (ed.). 1961. *Man Shu (Book of the Southern Barbarians)*. Ithaca: Southeast Asia Program, Cornell University.
- Okada, A. 1995. Ajanta. New Delhi: Brijbasi.
- O'Neill, H. 1994. South-East Asia: the Mosque, history, architectural development and regional diversity, in M. Frishman and H.U. Khan (eds) *The Mosque: History, Architectural Development and History*: 225-240. London: Thames and Hudson.
- Oracion, E.G. 1983a. Ethnicity, intermarriage and change in the biosocial structure of the contemporary Negrito population in southern Negros, Philippines. *Silliman Journal* 30: 98-110.
- Oracion, E.G. 1983b. Negrito subsistence strategies in the changing upland ecosystem of southern Negros, Philippines. *Silliman Journal* 30: 116-126.
- Oracion, E.G. 1984. Ecology and interethnic resource exchange: a spatio-temporal analysis of Negrito socioeconomic adaptation in southern Negros, Philippines. Unpublished MA dissertation, Silliman University, Dumaguete.
- Oracion, T.S. 1960. Notes on the culture of Negritos on Negros Island. Silliman Journal 7: 201-218.
- Oracion, T.S. 1963. Notes on the social structure and social change of the Negritos of Negros Island. *Philippine Sociological Review* 11: 57-67.
- Oracion, T.S. 1965. Bais Forest Reserve Negritos: some notes on their rituals and ceremonials. *Science Review* 6: 23-30.
- Oracion, T.S. 1967. The Bais Forest Reserve Negritos: some notes on their rituals and ceremonials, in M.D. Zamora (ed.) *Studies in Philippine Anthropology*: 419-442. Quezon City: Alemar.
- O'Reilly, D. 2007. Early Civilizations of Southeast Asia. Lanham: Altamira Press.
- Ortelius, A. 1597. Periplus Maris Erythraeid [Περίπλους τὴς Ἐρυθράς Θαλάσσης, Periplus of the Erythraean Sea], attributed to Arrian. Viewed at Wikimedia Commons, 'File:PeriplusAncientMap. jpg', Source: Plate 162 from Theatrum orbus terrarium / Abraham Ortelius, Antverpiae: Apud Ioannem Bapt. Vrintium, 1609, <https://commons.wikimedia.org/wiki/File:PeriplusAncientMap. jpg>, 15 December 2019.
- Oshegova, N. and S.S. Oshegov. 1988. *Kunst in Burma 2000 Jahre Architektur, Malerei und Plastik im Zeichen des Buddhismus und Animismus*. Translated by Christian Heidmann. Leipzig: Seeman Verlag.
- Pal, S. 2012. Champa inscriptions from the sixth to the tenth century CE: an overview. Unpublished manuscript.
- Palmer, C. 2009. Windward sailing capabilities of ancient vessels. *The International Journal of Nautical Archaeology* 38 (2): 314-330.
- Pandian, P.P. 1989. *Cāttanār's Maņimēkalai*. Tinnevelly: The South India Saiva Siddharta Works Publishing Society.
- Papadopoulo, A. 1988. Le Mihrab dans l'architecture et la religion musulmanes. Actes du colloque international tenu à Paris en Mai 1980. Leiden: Brill.
- Parry, W. 1982a. Observations on the arrow technology of the Negritos of northern Negros, Philippines, in K. Hutterer and W.K. McDonald (eds) *Houses Built on Scattered Poles: Prehistory and Ecology in Negros Oriental, Philippines*: 107-116. Cebu City: University of San Carlos.
- Parry, W. 1982b. Stone tools from the Bais Area, Philippines: technology, function and distribution, inK. Hutterer and W.K. McDonald (eds) *Houses Built on Scattered Poles: Prehistory and Ecology in NegrosOriental, Philippines*: 303-321. Cebu City: University of San Carlos.

- Pawley, A.K. and M. Pawley. 1994. Early Austronesian terms for canoe parts and seafaring, in A.K. Pawley and M.D. Ross (eds) *Austronesian Terminologies: Continuity and Change* (Pacific Linguistic Series C-127): 329-361. Canberra: Australian National University.
- Pelliot, P. 1904. Deux itinéraires de Chine en Inde à la fin du VIIIe siècle. Bulletin de l'École français d'Extreme Orient 4: 131-413.
- Pelliot, P. 1925. Quelques textes chinois concernant l'Indochine Hindouisée, in G. van Oest (ed.) Études Asiatiques publiées à l'occasion du vingt-cinquième anniversaire de l'École Française d'Extrême-Orient. Volume 2: 243-263. Paris: École Française d'Extrême-Orient.
- Pelliot, P. 1963. Notes on Marco Polo, Volume 2. Paris: Imprimerie Nationale.
- Pe Maung Tin and G.H. Luce. 1923. *The Glass Palace Chronicle of the Kings of Burma*. London: Oxford University Press.
- Peng, K. and Y. Zhu. 1995. *New Research on the Origins of Cowries in Ancient China* (Sino-Platonic Papers 68). Philadelphia: University of Pennsylvania.
- Peng Xinwei (ed.) 1958. 中國貨幣史 [Chinese Monetary History]. Shanghai: Shanghai People's Publishing House (SPPH).
- Perret, D. and Heddy Surachman. 2009. *Histoire de Barus III. Regards sur une place marchande de l'océan Indien (XIIe-milieu du XVIIe s)* (Cahiers d'Archipel 38). Paris: Association Archipel.
- Perry, W.J. 1918. *Megalithic Culture of Indonesia*. Manchester: Manchester University Press.
- Picken, L.E.R. (ed.) 1981-1990. *Music from the Tang Court. Volumes 1-7.* Oxford and Cambridge: Oxford University Press (Volume 1) / Cambridge University Press (Volumes 2-7).
- Picken, L.E.R., C.J. Adkins and T.F. Page. 1984. The making of a khaen: the free reed mouth organ of north east Thailand. *Musica Asiatica* 4: 117-154.
- Pigeaud, T.G. 1960. Java in the Fourteenth Century, A Study in Cultural History, Nagarakertagama. Volume 3. The Hague: M. Nijhoff.
- Pohl, H. 2007. From the *kattumaram* to the *fibre-teppa* changes in boatbuilding traditions on India's east coast. *International Journal of Nautical Archaeology* 36 (2): 382-408.
- Polo, M. (1350) 2005. *The Travels Of Marco Polo*. Translated by P. Smethurst. New York: Barnes and Noble, Inc. Potshangbam, B.D. 2011. *The Megalithic Culture of Manipur*. Delhi: Agam Kala Prakashan.
- Prijotomo, J. 1992. Ideas and Forms of Javanese Architecture. Yogyakarta: Gadjah Mada University Press.
- Ptak, R. 1998. Possible Chinese references to the Barus area (Tang to Ming), in C. Guillot (ed.) *Histoire de Barus (Sumatra): Le site de Lobu Tua. Tome I, Études et documents* (Cahiers d'Archipel 30): 119-147. Paris: Association Archipel.
- Pukhan, J.N. 2002. Arunachal's trade with its neighbours in the pre-colonial days, in S. Dutta (ed.) Cross-Border Trade of North-east India: 138-148. Gurgaon: Hope India Publications
- Pullen, L. 2017. Representation of textiles on Classical Javanese sculpture. Unpublished PhD dissertation, SOAS, University of London.
- Qagliotti, A.M. 1991-1992. The Buddha, the Solar Disk and the Cosmic Tree. A relief in the Victoria and Albert Museum. *Silk Road Art and Archaeology* 2: 73-105.
- Qu, J.F., Y.Q. Feng, G. Li, C. Tang and Z.T. Shang. 1994. 区家发、冯永驱、李果、邓聪、商志(香覃). [A brief report on excavations at the Dawan Site on Lamma Island, Hong Kong], in T. Chung (ed.) *Studies of Ancient Cultures in Southern China and Neighboring Areas*: 195-208. Hong Kong: Chinese University of Hong Kong.
- Quaritch Wales, H. 1948. Culture change in greater India. Journal of the Royal Asiatic Society 1: 2-32.
- Quaritch Wales, H. 1951. The Making of Greater India: A Study in South-East Asian Cultural Change. London: Bernard Quaritch.
- Rahmann, R. 1963. The Negritos of the Philippines and the early Spanish missionaries. *Studi Instituti Anthropos* 18: 137-157.
- Rahmann, R. 1975. The Philippine Negritos in the context of research on food-gatherers during this century. *Philippine Quarterly of Culture and Society* 3 (4): 204-236.

- Rahmann, R. 1976. A preliminary note on studies in southeast Asian mythology and folk literature. *Philippine Quarterly of Culture and Society* 4 (4): 283-284.
- Rahmann, R. and M.N. Maceda. 1955. Notes on the Negritos of northern Negros. Anthropolos 50: 810-836.
- Rahmann, R. and M.N. Maceda. 1973. Field work among the Negritos of northern Negros: an additional report. *Philippine Quarterly of Culture and Society* 1: 149-166.

Rai, N. 1990. Living in a Lean-to: Philippine Negrito Foragers in Transition. Ann Arbor: University of Michigan.

- Raikar, Y.A. and S. Chatterjee. 1980. *Archaeology in Arunachal Pradesh*. Shillong: Government of Arunachal Pradesh.
- Rajamanickam, G.V. 2004. *Traditional Indian Ship Building: Memories, History, Technology*. Delhi: New Academic Publishers.
- Rathbone, D. 1993. Egypt, Augustus and Roman taxation. *Cahiers du Centre Gustave Glotz* 4 (1): 81-112.
- Rau, F. and P. Sidwell. 2019. The Munda Maritime Hypothesis. *Journal of the Southeast Asian Linguistics Society* 12 (2): 35-57.
- Rawson, J. 1984. Chinese Ornament, the Lotus and the Dragon. London: British Museum Publications Ltd.
- Ray, H.P. 1989. Early maritime contacts between South and Southeast Asia. *Journal of Southeast Asian Studies* 20: 42-54.
- Ray, H.P. 2003. The Archaeology of Seafaring in Ancient South Asia. Cambridge: Cambridge University Press.
- Ray, H.P. 2016. Review. Southeast Asia in the ancient Indian Ocean world. *Nautical Archaeology* 45 (1): 210-212.
- Raymond, C. 1998. Wathundayé divinité de la terre en Birmanie et en Arakan, in *Études birmanes* (Études thématiques 9): 113-127. Paris: École française d'Extrême-Orient.
- Redman, C. 2005. Resilience theory in archaeology. American Anthropologist 107 (1): 70-77.
- Reichle, N. 2007. Violence and Serenity, Late Buddhist Sculpture from Indonesia. Honolulu: University of Hawai'i Press.
- Reid, A. 2009. Seismology and human settlement: global contexts for local (Sumatra) patterns. Paper presented at the conference 'Nature-Culture Relations over World History: Globalisation, Crises, and Time', Kyoto University, December 2009. Unpublished manuscript.
- Revire, N. 2011. Re-exploring the Buddhist 'foundation deposits' at Chedi Chula Prathon, Nakhon Pathom. Paper presented at the conference 'Buddhist Dynamics in Premodern Southeast Asia', 10-11 March 2011. Nalanda-Srivijaya Centre Institute of Southeast Asian Studies, Singapore. Unpublished manuscript.
- Revire, N. 2015. Re-exploring the Buddhist "foundation deposits" at Chedi Chula Prathon, Nakhon Pathom, in D. Chiristian Lammerts (ed.) *Buddhist Dynamics in Premodern and Early Modern Southeast Asia*: 172-217. Singapore: Institute of Southeast Asian Studies.
- Reynolds, C.J. 1995. A new look at old Southeast Asia. *The Journal of Asian Studies* 54 (2): 419-446.
- Reynolds, H. 1974. The Mountain Negritos of northern Negros. *Philippine Quarterly of Culture and Society.* 2: 227-230.
- Reynolds, H. 1983. Research and participant intervention in Mountain Negrito Development Project of northern Negros. *Silliman Journal* 30: 163-175.
- Rhoads, J.W. 1981. Variation in landuse strategies among Melanesian sago eaters. *Canberra Anthropology* 4 (2): 45-73.
- Riddi, A. 2002. Khore (trade activities): Tagins and Tibet, in S. Dutta (ed.) *Cross-Border Trade of North-east India*: 72-79. Gurgaon: Hope India Publications.
- Riegl, A. 1893 (1992). *Problems of Style: Formation for a History of Ornament*. Translated by E. Kain. Princeton: Princeton University Press.
- Rispoli, F. 2008. The incised and impressed pottery of mainland Southeast Asia: following the paths of Neolithization. *East and West* 57: 235-304.
- Robards, M. and L. Alessa. 2004. Timescapes of community resilience and vulnerability in the circumpolar North. *Arctic* 57 (4): 415-427.

Robson, S. (trans.) 1995. Deśawarnana (Nāgarakṛtāgama). By Mpu Prapañca. Leiden: KITLV Press.

Rogers, J.M. 2005. The Timeline History of Islamic Art and Architecture. Letchworth Garden City: Worth Press Ltd.

- Romer, F. (trans.). 1998. Pomponius Mela's Description of the World. Ann Arbor: University of Michigan Press.
- Roux, V. 2007. Ethnoarchaelogy: a non historical science of reference necessary for interpreting the past. *Journal of Archaeological Method and Theory* 14 (2): 153-178.
- Roveda, V. 2005. Images of Gods: Khmer Mythology in Cambodia, Thailand and Laos. Bangkok: River Books.
- Roy, S.K. 2004. Ceramics of Northeast India: Ethno-archaeological Perspectives. New Delhi: Himalayan Publishers.
- Rubin, C.M., B.P. Horton, K. Sieh, J.E. Pilarezyk, P. Daly, N. Ismail and A.C. Parnell. 2017. Highly variable recurrence of tsunamis in the 7,400 years before the 2004 Indian Ocean tsunami. *Nature Communications* 8: 16019.
- Ruggles, D.F. 2000. *Gardens, Landscape, and Vision in the Palaces of Islamic Spain*. University Park: Pennsylvania State University Press
- Ruskin, J. 1853 (2001). The Stones of Venice. London: The Penguin Group.
- Rutherford, S. (ed.) 1996. Insight Guides Indonesia. Hong Kong: Aga Publications Ltd.
- Sagart, L. 1999. The Roots of Old Chinese. Amsterdam: John Benjamins Publishing Company.
- Sahu, B.P. 2012. Recent perspectives of the state and debates in early Indian history. *Indian Historical Review* 39 (2): 145-162.
- Sahu, B.P. 2013. Legitimation, ideology and state in Early India, in B.P. Sahu (ed.) *The Changing Gaze: Regions and the Constructions of Early India*: 179-215. New Delhi: Oxford University Press.
- Sakchai Saisingh. 2004. Silapa thawarawadi wathanatham phutthasasanayuk raek rœm nai din daen thai [L'art de Dvāravatī, la première civilisation bouddhiste de Thaïlande]. Bangkok: Muang Boran.
- Sastri, K.A.N. 1944. The Tamil land and the Eastern Colonies. Journal of the Greater India Society 11: 26–28.
- Schlegel, G. 1901. The old states in the island of Sumatra. *T'oung Pao* 2 (2): 107-138.
- Schnitger, F.M. 1937. The Archaeology of Hindoo Sumatra. Leiden: Brill
- Schnitger, F.M. 1964. Forgotten Kingdoms of Sumatra. Leiden: Brill.
- Schoff, W. (trans.) 1912. The Periplus of the Erythrean Sea. Travel and Trade in the Indian Ocean by a Merchant of the First Century. New York: Longmans, Green and Co.
- Schoff, W. 1917. Navigation to the Far East under the Roman Empire. *Journal of the American Oriental Society* 37: 240-249.
- Schweyer A.-V. 1999. Chronologie des inscriptions publiées du Campā. Bulletin de l'Ecole française d'Extrême-Orient 86 (1): 321-344.
- Schwörer, G. 1982. *Die Mundorgel bei den LA*^{*}*HU_ in Nord-Thailand.* Hamburg: Karl Dieter Wagner.
- Schwörer-Kohl, G. 1997. Mundorgel, in L. Finscher (ed.) *Die Musik in Geschichte und Gegenwart. Volume 6:* 1-12. Kassel: Bärenreiter.
- Sedyawati, E. 1990. The making of Indonesian art, in J. Fontein *The Sculpture of Indonesia*: 104-108. Washington, DC: National Gallery of Art.
- Seitz, S. 2004. The Aeta at Mt. Pinatubo, Philippines: A Minority Group Coping with Disaster. Quezon City: New Day Publishers.
- Sellett, F., R. Greaves and P.-L. Yu. 2006. *Ethnography and Ethnoarchaeology of Mobility*. Gainesville: University of Florida Press.
- Sen, J.K. 2007. The Nāga-protected Buddha in the Norton Simon Museum: further comments, in P. Pal (ed.) *Buddhist Art: Form and Meaning*: 64-69. Mumbai: Marg.
- Seneviratne, S. 1981. Kalinga and Andhra: secondary state formation in early India. *Indian Historical Review* 7 (1-2): 54-69.
- Settar, S. and G.D. Sontheimer. 1982. *Memorial Stones: A Study of their Origin, Significance, and Variety.* Dharwad and Heidelberg: Institute of Indian Art History, University of Dharwad and South Asia Institute, University of Heidelberg.

- Sevink, J. 1914. Een tocht om den Dobo. Berichten uit Nederlandsch Oost-Indie voor de Leden van den Sint-Claverbond 1914: 3-23.
- Sharma, T.C. 1984. Recent advances in prehistory and archaeology of northeast India. *Journal of the Assam Research Society* 28: 1-28.
- Sharma, T.C. 1990. Discovery of Hoabinhian cultural relics in north-east India, in N.C. Ghosh and S. Chakrabarti (eds) *Adaptation and Other Essays: Proceedings of the Archaeological Conference, 1988*: 136-139. Santiniketan: Visva-Bharati Research Publications.
- Shirō, M. and A. Reid. 2013. Introduction: maritime interactions in eastern Asia, in F. Kayoko, M. Shirō and A. Reid (eds) *Offshore Asia: Maritime Interactions in Eastern Asia before Steamships*: 1-15. Singapore: Institute of Southeast Asian Studies.
- Sichuan Province Heritage Management Committee. 1981. Sichuan cultural relics archaeological work for 30 years, in *Cultural Archaeology Work for 30 Years*: 39-49. Beijing: Cultural Relics Press.
- Sichuan Provincial Commission for the Preservation of Ancient Monuments. 1987. Sichuan Baoxing Longdong Donghan Muqun [The Eastern Han tombs at Longdong in Baoxing, Sichuan]. *Wenwu* 文物 10: 34-53.
- Sichuan Provincial Commission for the Preservation of Ancient Monuments. 1999. Sichuan Baoxing Hantashan Zhanguo Tukeng Jishi Mu Fajue Baogao [Excavations of stone-barrowed tombs of the Warring-States Period on Hanta Hill, Baoxing County, Sichuan]. *Kaogu Xuebao* 3: 337-366.
- Sichuan Provincial Institute of Cultural Relics and Archaeology. 1999. *Sanxingdui Jisi Keng*. [Excavation of the Sacrificial Pits at Sanxingdui]. Beijing: Wenwu Chubanshe.
- Sichuan Provincial Institute of Cultural Relics and Archaeology and Ganzi Wenguansuo. 1991. Sichuan Luhuo Kasha Hu Shiguan Mu [Cist tombs on Kasha Lake, Luohuo County, Sichuan]. *Kaogu Xueba* 2: 207-238.
- Sichuan Provincial Museum. 1981. Sichuan xichang suburb hill cremation tomb group trial report. *Archaeology and Cultural Relics* 1: 61-63.
- Sidomulyo, H. 2010. From Kuta Raja to Singhasari, towards a revision of the dynastic history of the 13th century Java. *Archipel* 80: 1-62.
- Sidwell, P. and R.M. Blench. 2011. The Austroasiatic *Urheimat*: the Southeastern Riverine Hypothesis, in N. Enfield (ed.) *Dynamics of Human Diversity in Mainland SE Asia*: 317-345. Canberra: Pacific Linguistics.
- Sieh, K. 2012. The Sunda megathrust past, present and future, in P. Daly, R.M. Feener and A. Reid. (eds) *From the Ground Up Perspectives on Post-Tsunami and Post-Conflict Aceh*: 1-22. Singapore: Institute of Southeast Asian Studies.
- Sieh, K., D.H. Natawidjaja, A.J. Meltzner, C.C. Shen, H. Cheng, K.S. Li, B.W. Suwargadi, J. Galetzka, B. Philibosian and R.L. Edwards. 2008. Earthquake supercycles inferred from sea-level changes recorded in the corals of West Sumatra. *Science* 322: 1674-1678.
- Sieh, K., P. Daly, E. Edwards McKinnon, J.E. Pilarczyk, H.W. Chiang, B. Horton, C.M. Rubin, C.C. Shen, N. Ismail, C.H. Vane and R.M. Feener. 2015. Penultimate predecessors of the 2004 Indian Ocean tsunami in Aceh, Sumatra: stratigraphic, archaeological, and historical evidence. *Journal of Geophysical Research B: Solid Earth* 120 (1): 308-325.
- Sikdar, S. 1982. Tribalism vs. colonialism: British capitalistic intervention and transformation of primitive economy of Arunachal Pradesh in the nineteenth century. *Social Scientist* 10 (12): 15-31.
- Sikdar, S. 2000. Trade fairs in Arunachal-Assam border, in S. Dutta (ed.) *Studies in the History, Economy and Culture of Arunachal Pradesh*. Revised edition: 286-299. Itanagar: Himalayan Publishers.
- Sima Qian, no date. Account of the Southwestern Yi People of Shiji (The Records of the Grand Historian), Chinese Text Project, viewed 26 November 2019, https://ctext.org/shiji.
- Sima Qian. 1973. *Records of the Historian*. Beijing: Zhonghua Publishing House.
- Simon, I.M. 1993. Aka Language Guide. Itanagar: Government of Arunachal Pradesh.
- Simoons, F.J. and E.S. Simoons. 1968. *A Ceremonial Ox of India: The Mithun in Nature, Culture, and History.* Madison: University of Wisconsin Press.

Singh, O.K. 1980. Archaeological researches in Manipur. Eastern Himalayas 17: 147-162.

- Singh, O.K. and T.C. Sharma. 1968. Studies on the prehistoric archaeology of the Garo Hills. *Journal of the Assam Scientific Society* 11: 36-50.
- Singh, O.K. and T.C. Sharma. 1969. On the discovery of Stone Age relics from Manipur. *Journal of the Assam Scientific Society* 12: 36-48.

Smith, H. 1933. Cinghalais ruval <<la voile>>. Bulletin de la Société de Linquistique 34 (2): 216-217.

- Smith, L. and L. Junker. 2014. Trade along the margins in the precolonial Philippines: upland entrepreneurs and the eleventh-sixteenth centuries Tanjay chiefdom. Paper presented at the conference 'Twentieth Congress of the Indo-Pacific Prehistory Association', Siem Reap, Cambodia, 12-18 January 2014. Unpublished manuscript.
- Smyth, H.W. 1906. *Mast and Sail in Europe and Asia*. London: John Murray.
- Snellgrove, D.L. (ed.) 1978. The Image of the Buddha. Paris and London: Serindia Publications/UNESCO.
- So, J.F. (ed.) 2000. *Music in the Age of Confucius*. Washington, D.C.: Sackler Gallery of Art.
- Solheim, W.G. II. 1983. Review article. Asian Perspectives 32 1980 (1983): 9-16.
- Southworth, W.A. 2004. The coastal states of Champa, in I. Glover and P. Bellwood (eds) *Southeast Asia From Prehistory to History*: 209-233. London: Routledge.
- Spennemann, D.R. 1984. Some critical remarks on the boats depicted on the South East Asian kettle drums. An assessment of daggerboards. *The International Journal of Nautical Archaeology* 13: 137-143.
- Spennemann, D.R. 1985a. On the Bronze Age ship model from Flores. Indonesia. *International Journal of Nautical Archaeology and Underwater Exploration* 14 (3): 237-241.
- Spennemann, D.R. 1985b. Einige Bemerkungen zum Dong-So'n Schiff vom Berg Dobo auf Flores, Indonesien. *Tribus* 34: 145-180.
- Spooner, D.B. (ed.) 1924. Annual Report of the Archaeological Survey of India 1921-22. Simla: Government of India Press.
- Sri Hardiati, E. 2009. Hindu-Buddhist sculptures from Sumatra II: treasures from Bumiayu and provincial museums, in F. Brinkgreve and R. Sulistianingsh (eds) *Sumatra Crossroads of Culture*: 71-85. Leiden: KITLV Press.
- Stadtner, D.M. 1999. Pagan bronzes: fresh observations, in D.M. Stadtner (ed.) *The Arts of Burma. New Studies*: 53-64. Mumbai: Marg.
- Stadtner, D.M. 2005. Ancient Pagan Buddhist Plain of Merit. Bangkok: River Books.
- Stadtner, D.M. 2013. Ancient Pagan Buddhist Plain of Merit. Bangkok: River Books.
- Stanish, C. 2004. The evolution of chiefdoms: an economic anthropological model, in G.M. Feinman and L.M. Nicholas (eds) *Archaeological Perspectives on Political Economies*: 7-24. Salt Lake City: University of Utah Press.
- Stark, M.T. 2006. Early mainland Southeast Asian landscapes in the first millennium AD. Annual Review of Anthropology 35: 407-432.
- Stark, M.T. and B. Sovath. 2001. Recent research on emergent complexity in Cambodia's Mekong. *Indo-Pacific Prehistory Association Bulletin* 21 (Melaka Papers 5): 85-98.
- Starostin, S.A. 2008. Altaic loans in Old Chinese, in A. Sanchez-Mazas, R.M. Blench, M.D. Ross, I. Peiros and M. Lin (eds) *Human Migrations in Continental East Asia and Taiwan. Matching Archaeology, Linguistics and Genetics*: 255-263. London: Routledge.
- STEDT (Sino-Tibetan Etymological Dictionary), no date (1987-2016), director J.A. Matisoff, University of California at Berkeley Linguistics Department, viewed 30 November 2019, http://stedt.berkeley.edu/~stedt-cgi/rootcanal.pl
- Steffy, J.R. 1994. Wooden Ship Building and the Interpretation of Shipwrecks. College Station: Texas A & M University Press.
- Stiles, D. 1977. Ethnoarchaeology: a discussion of methods and applications. *Man* 12: 87-103.
- Stonor, C.R. 1952. The Sulung tribe of the Assam Himalayas. Anthropos 47: 947-962.
- Strachan, P. 1994. Imperial Pagan. Art and Architecture of Burma. Honolulu: University of Hawai'i Press.

- Sturgeon, D. 2019. Chinese Text Project: a dynamic digital library of premodern Chinese, viewed 27 December 2019, < https://ctext.org/lost-book-of-zhou>.
- Stutterheim, W. 1932. Eine Statue des Javanischen Königs Krtanagara in Berlin? *Berliner Museen* 53 (3): 47-50. English translation by Gosta Bergholtz.
- Suarez, T. 1999. *Early Mapping of Southeast Asia.* Hong Kong: Tuttle Publishing.
- Subbarayalu, Y. 2009. A trade guild Tamil inscription at Neusu, Aceh, in D. Perret and Heddy Surachman (eds) *Histoire de Barus III. Regards sur une place marchande de l'océan Indian (XIIe-milieu du XVIIes)* (Cahiers d'Archipel 38): 529-532. Paris: Association Archipel.
- Suleiman, S. 1981. Sculptures of Ancient Sumatra. Jakarta: Pusat Penelitian Arkeologi Nasional.
- Sun, J.T.-S. 1993. A historical-comparative study of the Tani (Mirish) branch in Tibeto-Burman. Unpublished PhD dissertation, University of California, Berkeley.
- Tarling, N. (ed.) 1999. The Cambridge History of Southeast Asia. From Early Times to c. 1800. Cambridge: Cambridge University Press.
- Taylor, K.W. 1992. The early kingdoms, in N. Tarling (ed.) *The Cambridge History of Southeast Asia. From Early Times to c. 1800*: 137-183. Cambridge: Cambridge University Press.
- Thapar, R. 1978. Ancient Indian Social History: Some Interpretations. New Delhi: Orient Blackswan.
- Thapar, R. 1984. From Lineage to State: Social Formations in the Mid-First Millennium BC in the Ganga Valley. New Delhi: Oxford University Press.
- Thapar, R. 1987. The Mauryas Revisited. Calcutta: Centre for Studies in Social Sciences; K P Bagchi and Company.
- Thapar, R. (ed.) 1990. 印度古代文明 [Indian Ancient Civilization]. Translated by Lin Tai. Hangzhou: Hangzhou People's Publishing House.
- Thrasher, A.R. 1996. The Chinese Sheng: emblem of the phoenix. *Association for Chinese Music Research* (*ACMR*) *Reports* 9 (1): 1-20.
- Tibbets, G.R. 1979. A Study of the Arabic Texts Containing Material on South-East Asia. Leiden: E.J. Brill.
- Tjahjono, G. 1998. Architecture: Indonesian Heritage. Singapore: Archipelago Press.
- Tjandrasasmita, U. 1985. Le rôle de l'architecture et des arts décoratifs dans l'islamisation de l'Indonésie. Translated by C. Guillot. *Archipel* 29: 29-35.
- Tjoa-Bonatz, M.L., A. Reinecke and D. Bonatz (eds). 2012a. *Crossing Borders. Selected Papers from the 13th International Conference of the European Association of Southeast Asian Archaeologists. Volume 1. Singapore:* National University of Singapore Press.
- Tjoa-Bonatz, M.L., A. Reinecke and D. Bonatz (eds). 2012b. *Connecting Empires and States. Selected Papers from the 13th International Conference of the European Association of Southeast Asian Archaeologists. Volume 2.* Singapore: National University of Singapore Press.
- Topographische Inrichting. 1924. Groot Atjeh en Onderhoorigheden, map, Blad IVa, 1:40,000. Batavia: Topographische Inrichting.
- Tripathy, B. 1998. Pre-historic archaeology of Arunachal Pradesh. *The Orissa Historical Research Journal* 42 (1-4): 18-27.
- Turner, R.L. 1966. A Comparative Dictionary of the Indo-Aryan Languages. London: Oxford University Press. Uhlig, H. 2007. Jedwabny Szlak. Warsaw: Książnica.
- United States Navy Department Hydrographic Office. 1944. *Gazetteer (No. 10) Sumatra* (H.O. Publication No. 890). Washington, D.C.: United States Government Printing Office.
- Valentijn, F. 1724-1726. Oud en Nieuw Oost Indiën. Dordrecht: J. Van Braam.
- Van Brakel, L.F. 1969. The birth place of Hamza Pansuri. *Journal of the Malayan Branch of the Royal Asiatic Society* 42 (2): 206-212.
- Van der Tuuk, H.N. 1866. Short account of the Malay manuscripts belonging to the Royal Asiatic Society. *Journal of the Royal Asiatic Society* NS 2: 85-135.
- Vandier, N. 1938. Note sur un vase Chinois de Musée du Louvre. *Revue des arts asiatiques* 12: 133-141.
- Van Driem, G. 1998. Neolithic correlates of ancient Tibeto-Burman migrations, in R.M. Blench and M. Spriggs (eds) *Archaeology and Language II*: 67-102. London: Routledge.

- Van Driem, G. 2002. Tibeto-Burman replaces Indo-Chinese in the 1990s: review of a decade of scholarship. *Lingua* 111: 79-102.
- Van Driem, G. 2008a. To which language family does Chinese belong, or what's in a name? in A. Sanchez-Mazas, R.M. Blench, M.D. Ross, I. Peiros and M. Lin (eds) *Human Migrations in Continental East Asia and Taiwan. Matching Archaeology, Linguistics and Genetics*: 219-253. London: Routledge.
- Van Driem, G. 2008b. The Naga language groups within the Tibeto-Burman language family, in M. Oppitz, T. Kaiser, A. von Stockhausen and M. Wettstein (eds) *Naga Identities: Changing Local Cultures in the Northeast of India*: 311-321. Zurich: Snoeck Publishers.

Van Heekeren, H.R. 1958. The Bronze-Iron Age of Indonesia. The Hague: Martinus Nijhoff.

- Van Leur, J.C. 1955. Indonesian Trade and Society: Essays in Asian Social and Economic History. The Hague and Bandung: W. van Hoeve Ltd.
- Van Trong. 1979. New knowledges [sic] on Dong Son culture from archaeological discoveries these twenty years, in Committee for Social Sciences of Vietnam (ed.) *Recent Discoveries and New Views on some Archaeological Problems in Vietnam*: 1-8. Hanoi: Institute of Archaeology.
- Veth, P.J. 1873. Atchin en zijne betrekkingen tot Nederland. Leiden: Gualth. Kolff.
- Vickery, M. 2005. *Champa Revised* (Asia Research Institute Working Paper Series 37). Singapore: Asia Research Institute, National University of Singapore.
- Vogler, E.B. 1949. De Monsterkop uit het Omlijstingsornament van Tempeldoorgangen en -Nissen in de Hindoe-Javaanse Bouwkunst. Leiden: Brill.
- Von Furer Haimendorf, C. 1943. Megalithic rituals among the Gadabas and Bondos of Orissa. *Journal of the Asiatic Society of Bengal (Letters)* 5 (9): 149-178.
- Von Hinüber, O. 1996. *A Handbook of Pāli Literature* (Indian Philology and South Asian Studies 2). Berlin and New York: Walter de Gruyter.
- Vorreiter, V. 2009. Songs of Memory. Chiang Mai: Resonance Press.
- Vroklage, B.A.G. 1936. Das Schiff in den Megalithkulturen Südostasiens und der Südsee. Anthropos 31: 712-757.
- Vroklage, B.A.G. 1940. De prauw in culturen van Flores. *Cultureel Indie* 2: 193-199, 230-234 and 263-270.

Wagner, F.A. 1959. Indonesia, the Art of an Island Group. New York: Crown Publishers, Inc.

- Walker-Vadillo, V. 2015. Nautical Angkor: an iconological study of Khmer vessels in Angkorian basreliefs, in Sila Tripati (ed.) *Maritime Contacts of the Past: Deciphering Connections across Communities*: 402-428. New Delhi: Delta Book World.
- Wang Dadao. 1988. 雲南出土貨幣初探 [An overview of the currency unearthed in Yunnan]. Yunnan Cultural Relics 雲南文物 1988 5: 27-33.
- Wang Dadao. 1998. Yunnan Qujing Zhujie Batatai Gu Muqun Fajue Jianbao [Excavation report of ancient tombs at Batatai of Zhujie, Qujing District, Yunnan], in *Yunnan Kaogu Wenji*: 357-377. Kunming: Yunnan Minzu Chubanshe.

Wang Dayuan. 1981. Dao Yi Zhi Lue. (Explanation by Su Jiqing). Shanghai: Zhonghua Book Company.

- Ward, C. 2006. Boat-building and its social context in early Egypt: interpretations from the First Dynasty boat-grave cemetery at Abydos. *Antiquity* 80 (307): 118-129.
- Weismann, N. 2012. Depiction of Indo-Arabic ships on an eighteenth-century sea chart. *The Mariner's Mirror* 98 (4): 421-435.
- Wen Jiang 汶江 1980. 滇越考 [Interpretation of the relations between Yunnan and Annam]. Journal of Chinese Literature and History 中華文史論叢 1980 2: 61-66.
- Wheatley, P. 1959. Geographical notes on some commodities involved in Sung maritime trade. *Journal of the Malayan Branch of the Royal Asiatic Society* 32 (2): 5-41.
- Whitewright, J. 2007. Roman rigging material from the Red Sea port of Myos Hormos. *The International Journal of Nautical Archaeology* 36 (2): 282-292.
- Whitewright, J. 2009. The Mediterranean lateen sail in late antiquity. *The International Journal of Nautical Archaeology* 38 (1): 97-104.

- Whitewright, J. 2010. The potential performance of ancient Mediterranean sailing rigs. *The International Journal of Nautical Archaeology* 40 (1): 1-16.
- Whitewright, J. 2015. Sailing rigs of the western Indian Ocean during the first millennium AD, in Sila Tripati (ed.) *Maritime Contacts of the Past: Deciphering Connections across Communities*: 569-589. New Delhi: Delta Book World.
- Whitewright, J. 2018. Sailing and sailing rigs in the ancient Mediterranean: implications of continuity, variation and change in propulsion technology. *The International Journal of Nautical Archaeology* 47 (1): 28-44.
- Wild, F.C. and J.P. Wild. 2001. Sails from the Roman port at Berenike, Egypt. *The International Journal of Nautical Archaeology* 30 (2): 211-220.
- Wilkinson, F. 2005. Coastal design and tsunami mitigation for the United Nations High Commissioner for Refugees (UNHCR). Final report. Unpublished manuscript. Banda Aceh: UNHCR.
- Williams, J. 1975. Sārnāth Gupta steles of the Buddha's Life. Ars Orientalis 10: 171-192.
- Wisseman Christie, J. 1991. Ikat to batik? Epigraphic data on textiles in Java from the ninth to the fifteenth centuries, in M.-L. Nabholz-Kartaschoff, R. Barnes and D.J. Stuart-Fox (eds) *Weaving Patterns of Life. Indonesian Textile Symposium 1991*: 11-29. Basel: Museum of Ethnography.
- Wisseman Christie, J. 1993. Texts and textiles in Medieval Java. Bulletin de l'Ecole francais d'Extreme-Orient 80 (1): 181-211.
- Wisseman Christie, J. 1999. Asian sea trade between the tenth and thirteenth centuries and its impact on the states of Java and Bali, in H. Prabha-Ray (ed.) *Archaeology of Seafaring. The Indian Ocean in the Ancient Period*: 221-269. Delhi: Pragati Publications.
- Wittfogel, K.A. 1957. Oriental Despotism: A Comparative Study of Total Power. New Haven: Yale University Press.
- Wolff, J.U. 2010. *Proto-Austronesian Phonology with Glossary. Volume 2.* Ithaca: Cornell Southeast Asia Program Publications.
- Wolters, O.W. 1967. Early Indonesian Commerce, A Study of the Origins of Srivijaya. Ithaca: Cornell University Press.
- Woodward, H.W. 1979. The Bayon Period Buddha image in the Kimbell Art Museum. *Archives of Asian Art* 32: 72-83.
- Woodward, H.W. 1997. The Sacred Sculpture of Thailand: The Alexander B. Griswold Collection, The Walters Art Gallery. Baltimore: Walters Art Gallery.
- Woodward, H.W. 2005. Art and Architecture of Thailand from Prehistoric Times through the Thirteenth Century (Handbook of Oriental Studies, Section 3: Southeast Asia, Volume 14). Reprint. Leiden and Boston: Brill
- Woollett, J. 2007. Labrador Inuit subsistence in the context of environmental change: an initial landscape history perspective. *American Anthropologist* 109 (1): 69-84.
- Wu Chengzhi 吴承志. 1968. Tang Jia Dan ji bianzhou ru siyi dao li kaoshi / 唐贾耽记边州入四夷道里考实. [Research on the Way and Distance to Peripheral States and Nations Recorded by Jia Dan in the Tang Dynasty]. Taibei: Wenhai chuban she.
- Xiao Minghua. 2006. Bronze cowry-containers of the Dian Culture. *Chinese Archaeology* 6 (1): 168-173.
- Xiao Minghua. 2008. 肖明华: 滇池畔的青铜文明——滇王及其贵族墓,天津古籍出版社, 2008年 1月 [Bronze Civilization by the Dianchi Lake - Dian Emperor and Nobleman Grave]. Tianjin: Tianjin Guji Chubanshe.
- Xiong Yongzhong. 1988. 雲南古代用貝試探 [Study on the uses of seashells in ancient Yunnan]. 四川文物 [Sichuan Cultural Relics] 1988 5: 34-38.
- Yamagata, M. 2006. Inland Sa Huỳnh culture along the Thu Bồn River Valley in Central Vietnam, in E. Bacus, I. Glover and V. Piggott (eds) *Uncovering Southeast Asia's Past*: 168-183. Singapore: National University of Singapore Press.
- Yamagata, M. 2007. The early history of Lin-I viewed from archaeology. *Acta Asiatica: Bulletin of Eastern Culture* 92: 1-30.

Yang, W. 1983. Sichuan Baoxing Xian Shiguan Mu [Stone coffin tombs in Baoxing County, Sichuan]. *Kaogu yu Wenwu* 6: 9-13.

Yang, Z. and Z. Hao (eds) 1997. 杨锺贤、郝志达主编: 全校全注全译全评史记, 天津古籍出版社 1997年8月第1版, 第五卷. Quanjiao quanzhu quanyi quanping Shiji [Shiji: Fully Collated, Annotated, Translated, and Evaluated]. Tianjin: Tianjin guji chubanshe.

Yatim, O. 2005. Malay arts: viewing the dimensions of creative expression, in J. Bennett (ed.) *Crescent Moon – Islamic Art and Civilization in Southeast Asia*: 102-117. Adelaide: Art Gallery of South Australia.

Yeomans, R. 1999. The Story of Islamic Architecture. New York: Garnet Publishing.

- Yule, H. 1875. The Book of Ser Marco Polo, the Venetian, Concerning the Kingdoms and Marvels of the East, Newly Translated and Edited with Notes, Maps, and Other Illustrations, Volumes 1-2. London: John Murray.
- Yule, H. and H. Cordier (eds and trans) 1903 (1975 reprint). *The Book of Ser Marco Polo The Venetian Concerning the Kingdoms and Marvels of the East. Volumes 1-2.* Amsterdam: Amorica Book Co. and Philo Press.
- Yunnan Provincial Institute of Cultural Relics and Archaeology. 1990. Jianchuan Aofengshan Gumu Fajue Baogao [Excavation of ancient tombs on Aofengshan Hill, Jianchuan County, Yunnan]. *Kaogu Xuebao* 2: 239-266.
- Yunnan Provincial Institute of Cultural Relics and Archaeology. 1998. Yunnan Jinning Shizhaishai Di wu ci Qiangjiuxing Qingli Fajue Jianbao [The fifth rescue excavation at Shizhaishan, Jinning, Yunnan]. *Wenwu* 6: 4-17.
- Yunnan Provincial Institute of Cultural Relics and Archaeology. 2001a. Yunnan Jiangchuan Ljiashan Gumu Qun Di er ci Fajue Jianbao [Secondary excavation in the Ancient Lijiashan Cemetery in Jiangchuan County, Yunnan]. *Kaogu* 12: 16-24.
- Yunnan Provincial Institute of Cultural Relics and Archaeology. 2001b. Yunnan Luxi Xian Heshangta Huozang Mu de Qingli [Excavation of tombs of cremation at Heshangta in Luxi County, Yunnan]. *Kaogu* 考古 12: 55-79.
- Yunnan Provincial Institute of Cultural Relics and Archaeology. 2002. *Dali Dafengle*. Kunming: Yunnan Keji Chubanshe.
- Yunnan Provincial Institute of Cultural Relics and Archaeology. 2003. *Qujing Batatai yu Hengdalu*. Beijing: Kexue Chubanshe.
- Yunnan Provincial Institute of Cultural Relics and Archaeology. 2005. Yunnan Zhongdian Xian Shiguan Mu [Cist tombs in Zhongdian County, Yunnan]. *Kaogu* 4: 28-39.
- Yunnan Provincial Institute of Cultural Relics and Archaeology. 2007. *Jiangchuan Lijiashan: Di er ci Fajue Baogao*. Beijing: Wenwu Chubanshe.
- Yunnan Provincial Institute of Cultural Relics and Archaeology. 2009a. *Heqing Xiangmian Shan Mudi* [*Cemetery at Xiangmian Mountain*]. Beijing: Wenwu Chubanshe.
- Yunnan Provincial Institute of Cultural Relics and Archaeology. 2009b. *Jinning Shizhaishan: Di wu ci Fajue Baogao [Shizhaishan at Jinning: The Fifth Excavation Report]*. Beijing: Wenwu Chubanshe.
- Yunnan Provincial Museum. 1956. Yunnan Jinning Shizhaishan Gu Yizhi ji Muzang [Excavations of early dwelling sites and tombs at Shih-chai-shan, Chin Ning, Yunnan]. *Kaogu Xuebao* 1: 43-64.
- Yunnan Provincial Museum. 1959a. Yunnan Jinning Shizhaishan Gu Muqun Fajue Baogao [Ancient Necropolis at Shizhai Shan, Jinning, Yunnan]. Beijing: Cultural Relics Press.
- Yunnan Provincial Museum. 1959b. Yunnan Jinning Shizhaishan Di san ci Fajue Jianbao [Excavations at Shih Chai Shan, Tsinning, Yunnan Province (3rd season)]. *Kaogu* 9: 458-461.
- Yunnan Provincial Museum. 1963. Yunnan Jinning Shizhaishan Di si ci Fajue Jianbao [Excavations at Shih Chai Shan, Tsinning, Yunnan Province (4th season)]. *Kaogu* 9: 480-485.
- Yunnan Provincial Museum. 1975. Yunnan Jiangchuan Lijiashan Gumu Qun Fajue Baogao [Excavation of an ancient cemetery at Li-chia-shan in Chiang-ch'uan County, Yunnan Province]. *Kaogu Xuebao* 2: 97-156.

- Yunnan Provincial Museum. 1981. Discovery and excavation of ancient culture in Yunnan, in *Cultural Archaeological Work for 30 Years*: 50-61. Beijing: Cultural Relics Press.
- Yunnan Provincial Museum. 1983. Yunnan Deqin Xian Nagu Shiguan Mu [Cist tombs at Nagu in Deqin County, Yunnan]. *Kaogu* 3: 220-225.
- Zaide, G.F. (ed. and trans.) 1990. Documentary Sources of Philippine Prehistory. Volumes 1-12. Manila: National Bookstore.
- Zaleski, V. 2009. Les décors de stuc et de terre cuite: des témoins de la cosmologie bouddhique?, in P. Baptiste and T. Zéphir (eds) *Dvāravatī, aux sources du bouddhisme en Thailande*: 169-179 and 246, No. 126. Paris: Musée Guimet.
- Zhang Zengqi. 1982.戰國至西漢時期滇池區域發現的西亞文物 [Research on relics of Western Asia unearthed in the Dianchi Lake area and dating from the Warring States period to the Western Han Dynasty]. *Sixiang Zhanxian* 思想戰線1982 2: 82-87.
- Zhao, D.Z. 1983. Sichuan Maowen Qiangzu Zizhixian Shiguan Zang Fajue Baogao [The excavation of the stone cist burials in Maowen Qiang Autonomous County, Sichuan]. *Wenwu Ziliao Congkan* 7: 34-55.

Zhao Lüfu (ed.) 1985. 雲南志校注 [The Annotated Yunnan Zhi]. Beijing: China Social Sciences Press.

Zhen Gong and Da Xiang. 1961. 西洋番國志 / Xi yang fan guo zhi. Beijing: Zhonghua shu ju.

- Zhu Kezhen. 1972. 中國近五千年來氣候變遷的初步研究 [A study of climate changes in China during the last 5000 years]. *Chinese Journal of Archaeology* 考古學報1972 1: 15-38.
- Zide, A.R.K. and N.H. Zide. 1976. Proto-Muṇḍā cultural vocabulary: evidence for early agriculture, in P.N. Jenner, L.C. Thompson and S. Starosta (eds) *Austro-Asiatic Studies, Part II*: 1295-1334. Honolulu: University of Hawai'i.

Zingarelli, A. 2016. Asiatic mode of production: considerations on ancient Egypt, in L. da Graca and A. Zingarelli (eds) *Studies on Pre-Capitalist Modes of Production*: 27-76. Chicago: Haymarket Books.

Zwalf, W. (ed.) 1985. Buddhism: Art and Faith. London: British Museum Publications.