



IOW-ARCH
Indian Ocean World
Archaeology Conference

Inaugural Conference

10th-11th January 2020, University of Exeter

Conference Abstracts

Organising Committee:

Annabel Gallop, Mark Horton, Timothy Insoll, Derek Kennet,
Elizabeth Lambourn, Stephanie Wynne-Jones, Ran Zhang

Conference Administrator:

Hannah Parsons



IOW-Arch Timetable

Friday: 1300 – 19.30	Time	Hours/ Minutes	Lecture Theatre 2 No. of Speakers & Theme
Registration	13.00 – 13.20	20 minutes	
Welcome	13.20 – 13.30	10 minutes	
Session 1	13.30 – 14.50	1 hour 20 minutes	4 – Maritime Archaeology/ Ethnography
Break	14.50 – 15.10	20 minutes	
Session 2	15.10 – 16.30	1 hour 20 minutes	4 – Material Studies
Break	16.30 – 16.50	20 minutes	
Session 3	16.50 – 18.30	1 hour 40 minutes	5 – New Archaeological Investigations
Exhibition Launch with wine reception and buffet	18.30	Venue: Street Gallery	Institute of Arab and Islamic Studies
Saturday: 8.45 – 18.00	Time	Hours/ Minutes	Lecture Theatre 1 & 2 No. of Speakers & Theme
Registration	08.45 – 09.00	15 minutes	
Session 1	09.00 – 10.40	1 hour 40 minutes	5 – Manuscripts/ Epigraphy
Break	10.40 – 11.00	20 minutes	
Session 2	11.00 – 12.40	1 hour 40 minutes	5 – Ceramics
Lunch	12.40 – 13.20	40 minutes	
Session 3	13.20 – 15.00	1 hour 40 minutes	5 – Red Sea, Kenya and Tanzania
Break	15.00 – 15.20	20 minutes	
Session 4	15.20 – 17.20	2 hours	6 – Zanzibar, Madagascar, Comoros
Break	17.20 – 17.30	10 minutes	
Closing remarks	17.30 – 18.00	30 minutes	
Dinner	19.00	Venue: Cosy Club	1 Southernhay Gardens, Exeter, EX1 1SG

Friday

13.00 - 13.20 - Registration

13.20 - 13.30 - Welcome

Session 1 (LT2) - Maritime Archaeology and Ethnography:

13.30 - 13.50 - Wynne-Jones, Stephanie & Annabel Hancock: *Travel itineraries and object cargoes: comparing networks of movement in the medieval Indian Ocean Coast*

13.50 - 14.10 - Christie, Annalisa: *Understanding the Maldivian maritime landscape: recent ethnographic work in the Maldives*

14.10 - 14.30 - Blue, L., Cooper, J., Ichumbaki, E.: *Bahari Yetu, Urithi Wetu (Our Ocean, Our Heritage): Heritage, Sustainability and Change in the maritime cultural landscape of Bagamoyo, Tanzania*

14.30 - 14.50 - Ghidoni, Alessandro: *The ship timbers from al-Balid, southern Oman. Technologies and materials of the Indian Ocean sewn watercraft in the 10th-15th centuries CE*

Break – 14.50 – 15.10

Session 2 (LT2) – Material Studies:

15.10 - 15.30 - Haddon, Rosalind A. Wade: *Imported Timber in the Medieval World*

15.30 - 15.50 - Trivedi, Mudit: *Indian Glass in the Indian Ocean? New results and constraints from Medieval Indor (North India)*

15.50 - 16.10 - Le Maguer-Gillon, Sterenn: *The incense trade in the Indian Ocean, 7th-12th centuries*

16.10 - 16.30 - Yamaguchi, H., Yoneda, M., Kondo, O., Shitara, H., Toizumi, T., Wei, D., Sugiyama, C.: *A macronutrient-based model using carbon isotope ratios in dentine collagen and enamel carbonate reveals millet consumption by prehistoric Japanese populations*

Break – 16.30 – 16.50

Session 3 – New Archaeological Investigations:

16.50 - 17.10 - Insoll, T., MacLean, R., Almahari, S., Carter, R.: *Investigating the late Antique/Early Islamic transition in Bahrain*

17.10 – 17.30 - Wain, Alexander: *New Archaeological Data on the Islamisation of the Malay Archipelago*

17.30 - 17.50 - Dupoizat, Marie-France: *The Lobu Tua site of Barus, an early settlement in the Indian Ocean coast of Sumatra*

17.50 - 18.10 Arfeen, Percy: *Placing Kerala within the Indian Ocean World: Investigating Transcultural Sacred Spaces*

18.10 – 18.30 – La Silvia, V., Hill, D., Moderato, M.: *New Data from Madayi Fort Area (Payannur, Kerala, India). A preliminary Note*

18.30 – Exhibition Opening with wine reception and buffet

Saturday

Registration 8.45 - 9.00

Session 4 – Manuscripts/ Epigraphy:

09.00 - 09.20 - Gallop, Annabel: *The art of the Qur'an in the Indian Ocean World*

09.20 - 09.40 - bin Azmi, Riswadi: *Quran manuscript in maritime south East Asia*

09.40 - 10.00 - Lambourn, Elisabeth: *Material cultures of writing in the medieval Indian Ocean world. On the reception of a palm leaf letter at the Mamluk court*

10.00 - 10.20 - Peacock, Andrew: *Arabic manuscripts from a royal Javanese library: some remarks on the transmission of books and texts across the 18th century Indian Ocean*

10.20 - 10.40 - Rahardjo, Jessica: *The Batu Aceh tradition: Islamic carved tombstones in the early modern Indian Ocean world*

Break – 10.40 - 11.00

Session 5 – Ceramics:

11.00 - 11.20 - Kennet, D., Brown, P., Zhang R.: *Using Longquan Celadon to investigate the development of Indian Ocean trade*

11.20 - 11.40 - Priestman, Seth: *More a Wave than a Boom: Intensification of Exchange in the Southern Gulf from the Rise of Hormuz to the Modern Era*

11.40 - 12.00 - Zhang, Ran: *Discoveries and the Rise of Longquan Celadon in the Western Indian Ocean: A Preliminary Discussion*

12.00 - 12.20 - Wen, Wen: *Chinese and Abbasid ceramic exchange, 8th -10th centuries CE*

12.20 - 12.40 - Autiero, Serena: *Pottery in the Western Indian Ocean: A Reassessment from a Multidisciplinary Point of View (3rd Century BC-5th Century AD)*

Lunch – 12.40 - 13.20

Session 6 – Red Sea, Kenya and Tanzania:

13.20 - 13.40 - Cobb, Matt: *“Barbarians” and Blemmyes: who was in control of the Red Sea branch of the Indian Ocean trade at the end of Antiquity*

13.40 - 14.00 - Smith, L., Taha, S., Michael M., Phillips, J., Abdelrahman A. M.: *Sister Seas: links between African Red Sea ports and the Gulf region from the Ottoman to the modern period*

14.00 - 14.20 - Tait, Nick: *Local ceramics from the medieval Islamic trade centre of Harlaa, Eastern Ethiopia (10th – 14th century AD) – An Overview*

14.20 - 14.40 - Mokri, Yanis: *The Tana Delta in the Indian Ocean trade network, archaeological evidences of local and global interactions in a Kenyan coastal hinterland*

14.40 - 15.00 - Pollard, E., Bates, R., Ichumbaki, E., Bitu, C., Graham, E., Kinyera O. C.: *Archaeological investigations around the port and shipwrecks of Kilwa, Tanzania, and the information recovered on Indian Ocean trade*

Break – 15.00 - 15.20

Session 7 – Zanzibar, Madagascar, Comoros:

15.20 - 15.40 - Fitton, Tom & Ali, Abdallah K. *Zanzibar: Island and Coast*

15.40 - 16.00 - Rødland, Henriette: *Archaeologies of enslavement and non-elite identity in Swahili urban societies*

16.00 - 16.20 - Anderson, Nathan: *The Materiality of Islamization as Observed in Archaeological Remains in Northern Madagascar. Excavations at Kingany, May 2019*

16.20 - 16.40 - Morel, Mélissa, Serneels, Vincent: *Production and consumption of Iron on the northeastern coast of Madagascar during the 11th to the 15th century*

16.40 - 17.00 - Nitsche, C., Velomora, S., Radimilahy, C., Schreurs, G., Serneels, V.: *Petrology and Medieval Indian Ocean Trade: Studying Amphibole-bearing Softstone Vessels and Quarries in Northern Madagascar*

17.00 - 17.20 - Horton, Mark, Patrick Faulkner and Alison Crowther: *Investigations at Sima, Comoros*

Break - 17.20 - 17.30

Closing Remarks - 17.30 - 18.00

Dinner - 19.00

Cosy Club, 1 Southernhay Gardens, Exeter, EX1 1SG

Nathan Anderson

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The Materiality of Islamization as Observed in Archaeological Remains in Northern Madagascar. Excavations at Kingany, May 2019.

Located in Boeni Bay, less than 50 km west of Mahajanga, Kingany was one of a number of mid-second millennium urban settlements active in Indian Ocean mercantile networks in north-western Madagascar. Following the 15th century collapse of Mahilaka, oceanic trade prioritization, and the often-associated trend of urbanization, swept southward along the western coast of Madagascar. Vérin argued that the town of Kingany became one such emerging center in the 15th century (Vérin 1986: 157). Fieldwork led by Nathan Anderson, conducted in partnership with the *Université d'Antananarivo* and the associated *Musée d'Art et d'Archéologie* in Antananarivo, Madagascar, in May of 2019 involved the excavation of twenty-five sondages and two larger investigation units at Kingany Site II. This expedition was designed to investigate Islamization at the site of Kingany and the Mozambique Channel at large.

While artifact analysis is ongoing, some preliminary hypotheses can be offered. Absolute dating of materials recovered from the terminal strata of Test Unit 1 suggest that Kingany Site II was inhabited by at least the mid-12th century. Islamization within the settlement likely began in the 12th century. Imported ceramics and other trade goods found at the site demonstrate that the community had access to long distance trade networks from as early as the late 10th up until the mid-14th century. These artifacts, while limited in quantity, reveal that communities within Boeni Bay shared in the networks which were supplying Mahilaka, with goods coming from Southeast Asia, East Asia, and the Persian Gulf (Radimilahy 2017). Additionally, chlorite schist and rock crystal finds suggest the existence of internal trade relationships with Madagascar's northeast and north-central highlands. Analysis of trends observed in the artifact assemblage recorded in Test Unit 2 would suggest that Kingany Site II experienced a gradual development, short peak immediately following the acceleration of Islamization at the site, represented by the construction of the southern mosque, and quick decline. Analysis of finds from the May 2019 excavations is ongoing and all observations are subject to change.

References:

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1993. "The Culture History of Madagascar." *Journal of World Prehistory*, December 1993, Vol. 7 (4). 417-466.
- Radimilahy, C.
2017. "Mahilaka". In: Wynne-Jones, S., and LaViolette, A. ed. *The Swahili World*, Abingdon: Routledge. 285-290.
- Vérin, P.
1986. *The history of civilization in North Madagascar*, Boston: A.A. Balkema. 157, 166, 171-173.

Placing Kerala within the Indian Ocean World: Investigating Transcultural Sacred Spaces

Recent scholarship has increasingly begun to question 'cultural landscapes' juxtaposed to territorial limits and the notion that cultural boundaries far exceed that of map perimeters, is presently recognised (Patel, 2004:7; Widiastuti, 2015:3,4). This paper will examine interreligious relations manifested in building traditions in Kerala, focussing on Muslims, Christians and Jews from the 13th to the 17th centuries CE, thereby placing Kerala in continuum within the larger Indian Ocean cultural landscape.

Treatises on the *Vāstuśāstra* (building scriptures), such as the *Mānasāra*, were codified in South Asia already by the 4th century CE (Thampuran, 2001:21). However, in South India they emerged as late as the 9th century CE, beginning with the composition of the *Māyāmata* in Tamil Nadu (Dagens, tr. 1994: ii). In Kerala, temple architecture also began from the 9th century onwards (preceded by Buddhist and Brahmanical rock-cut caves dating from around the 7th century CE), attesting the need for building traditions as an emerging social need. Interestingly, copper plate land grants viz. the *Tarissāppalli* and the Jewish copper plates, indicate the presence (if not the origin) of West Asian communities also from the 9th century onwards (849 CE and 1000 CE respectively), and earliest extant evidence can be dated to the 13th century.

Studies reveal that 'cultural landscapes' such as that of modern Kerala are grounded in a shared *regional* setting rather than that of shared *religious* origins, a case in point being Shokoohy's study of the Kerala mosques. He states that stylistic relationships of mosques of the Indian Ocean World (IOW) are "unrelated to and unaffected by the Sultanate and Mughal architecture of North India" (Shokoohy, 2003:3). Art and architecture of Kerala irrespective of religion is regarded as having developed "in slight deference to mainstream India" (Widiastuti, 2015:16). Regional studies in Kerala and in fact all along the western Indian coast exhibit an emergence of hybrid styles from around the 12th centuries CE (Patel, 2004:1; Heston, 2004:63,64) which suggest that henceforth, there developed more sustained contacts, exchanges and experiments of artisans with diverse occupational groups related to the expanding maritime networks (Ray, 1994:161).

Within the said framework, this paper will explore sacred spaces in Kerala, *across* religious traditions rather than around specific religious communities. This paper, therefore, will present a new perspective on the broader transcultural relations reflected in Kerala's sacred landscape, with the artisan communities as agents of such transcultural connections and material knowledge exchange.

References:

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Pottery in the Western Indian Ocean: A Reassessment from a Multidisciplinary Point of View (3rd Century BC-5th Century AD)

Pottery is a key material of the ancient Indian Ocean trade network and its study provides interesting insights on transcultural interactions. This study demonstrates that a reassessment from a multidisciplinary point of view offers new and original interpretations of known materials. It is undeniable that a strong bias in the study of Indian Ocean material culture is due to an overwhelming supremacy of data from the Western End of the routes; mostly this is due to more advanced and older studies, resulting in a Rome-centric perspective. Thanks to recent excavations, and to a long-due re-evaluation of the pottery finds in Western Indian Ocean (WIO) countries, a new understanding is catching on, strongly supporting the idea that South Arabia, Gulf countries and the Indian Subcontinent played a primary role in international exchanges.

Data on pottery will be compared to data on visual culture and iconography as represented by portable items such as terracotta and metal figurines, aiming to highlight how pottery exchange cannot be understood if taken out of the complex pattern of exchange in the early historic Indian Ocean World. Indian Ocean archaeology is obviously an extremely wide topic, both from a chronological and from a geographical point of view. Single case studies can only be understood if set in context in the wider frame of similar coeval phenomena.

In the early historic period the exchange patterns in the WIO led to rapid transformations due to the intensification of contacts and to increasing opportunities for the people involved. In the past people faced issues we still have to cope with today in our globalized world; among the most relevant processes, *hybridization* and *preservation of traditions* cover a particularly important point. The circulation of pottery – and more in general of portable items – is crucial for the understanding of how globalization impacts on people, and shows how the circulation of portable items functions as catalyst for change and innovation.

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Quran Manuscript in Maritime South East Asia

Maritime Southeast Asia consists of the various archipelagos and islands off the coast of Southeast Asia. The countries that make up Maritime Southeast Asia include: Brunei, Timor Laste, the Philippines, Indonesia, Singapore, and Malaysia. During the 16th century, this area was known as the East Indies and during the 19th century it became known as the Malay Archipelago. Today, it is known as the maritime region of Southeast Asia due to its location within the ocean, rather than the mainland. The presence of Islam in this area is evidenced by the existence of various Quran manuscripts with a various forms and illuminations.

The study was conducted to look at illumination patterns and the variety of standard text writing methods. In order to achieve the objectives of the study, the researcher conducted a tour of the countries in maritime Southeast Asia with a majority Muslim population. The focus of this study is on the Quran manuscript found in the Maritime Southeast Asia with a majority Muslim as it is found that only certain country have ever produced the Quran. Although there are other countries with Quran origin, early studies have found that the Qur'an is found in other countries. Studies on the physicality of the manuscript were carried out to see uniformity in terms of folio size, text size, colour used and binding. Comparative methods were also used to look at aspects of the pattern of illumination and the calligraphy used to write the text.

The results show that the Quran was first written in the 16th century and is widely used especially in places with large numbers of Muslims. There are some places that have a large number of manuscripts so that they are known for their magnificence. The physical shape of each Quran also has different shapes and sizes. It shows that each place has its own characteristics. Studies on the illumination aspect also show that every Quran produced is based on the patterns and motives that influence an area. Each Quran has its own definition and dominance of its own culture. As well as the quality of the Qur'an produced, it depends on the three groups that produce it, palaces, religion institution (madrasa) and individuals. This study is expected to highlight one of the countries of Maritime Southeast Asia with their own unique values and characteristics.

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Bahari Yetu, Urithi Wetu (Our Ocean, Our Heritage): Heritage, Sustainability and Change in the maritime cultural landscape of Bagamoyo, Tanzania

This paper explores the maritime cultural landscape of the port town of Bagamoyo, Tanzania. The diversity and dynamics of maritime activity along this vibrant beachfront will be highlighted: *Mashua* sailing dhows trading cargoes with Zanzibar; wooden boats being maintained and under repair; and a diverse array of fishing boats, often sailed, undertaking a variety of intensive fishing practices, landing their catches at the beachfront fish market. The areas of activity are mapped and explored to determine the variety and patterns of practise (Parker 2001), as well as daily rhythms dictated by the tide and given agency through the maritime communities. Underlying trends affecting heritage practice and landscape change are explored. This paper chronicles collaborative research conducted in 2019 by researchers from the universities of Dar es Salaam, Exeter and Southampton, funded by the GCRF *Risings From the Depths* programme: it weaves together multiple voices, including the researchers, tourists and the local antiquities authorities, but most importantly those of the maritime communities of Bagamoyo. It also aims to provide an insight into past practise, change over time, and—through co-creation—propose steps towards a more sustainable future.

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Understanding the Maldivian maritime landscape: recent ethnographic work in the Maldives.

The Maldives played a key role in the Indian Ocean World during the Medieval period. These islands were entirely dependent on foreign trade for many goods and commodities (the islands have no natural source of clay for example, so are unable to make pottery). Ceramic analysis drawn from excavations across the Maldives conducted during the Leverhulme Funded 'Cowrie Shells: An Early Global Commodity Project' (PI Prof. Anne Haour) has demonstrated their connections to India, China, Sri Lanka and Thailand amongst others. In exchange for these commodities, the Maldives supplied regional and international markets with dried fish, coconut coir rope and cowrie shells in exchange. During his visits to the islands in the early 14th century, Ibn Battuta noted that cowrie shells, collected and used as currency in the Maldives, were being traded with Bengal, Yemen, and as far afield as West Africa, where they were sold at a huge profit. As part of the wider project, I conducted 74 interviews with maritime practitioners (including fishers, cowrie shell collectors and boat builders) on 27 islands across the country. Through this I aimed to understand how these activities were organised, and how they contributed to shaping a Maldivian maritime identity. In this paper I present the outcomes of these surveys, considering these practices in light of similar interviews conducted as part of my doctoral research in the Mafia Archipelago, Tanzania.

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“Barbarians” and Blemmyes: who was in control of the Red Sea branch of the Indian Ocean trade at the end of Antiquity?

In the early centuries CE the Roman state controlled a number of Red Sea ports on the Egyptian coast and in the Gulf of Aqaba. It had also (re)constructed a series of fortlets along the Eastern Desert so as to connect these ports (particularly Myos Hormos and Berenike) with the Nile Valley. The Roman state's aim was to monitor the routes, ensure the payment of taxes on lucrative Indian Ocean products, and protect travellers against potentially dangerous *barbaroi* (the sweeping label given in ostraka to the various indigenous groups in the region). It even had a Red Sea fleet and soldiers stationed on the Farasan Islands by the second century, again potentially to protect against piracy, monitor shipping and to further other geostrategic interests. Indeed, Nappo (2015) has argued that the Roman state sought to dominate the wider Red Sea region.

Conversely, during the course of the third century this situation changed. The fortlets were abandoned, Myos Hormos (Quseir al-Qadim) ceased to function, and activity at Berenike reached a very low ebb. In the Late Antique period (fourth to early-seventh centuries) there was a revival of activity. Northern Red Sea ports like Clysma and Aila (controlled by the Roman/Byzantine state) grew in significance, while in the southern Red Sea the Axumites become a notable force (at times even dominating parts of southern Arabia). However, the situation in the central/northern-central region of the Eastern Desert and Red Sea coast has long been less clearly understood. Archaeological evidence indicates a revival of activity at Berenike from the mid-fourth century, but how the port operated and who was in charge has remained a contested issue. Some suggest that the Roman state was (in)directly in charge, perhaps through Christian Arab *foederati*, others take the view that the Blemmyes were in control, in line with the comments of Olympiodorus and Cosmas.

Recent archaeological and epigraphic discoveries allows us to shed light on this issue. This paper seeks to analyse this new evidence in order to address this question. In particular, arguing that Olympiodorus' and Cosmas' comments were correct – the Blemmyes likely did control the multicultural port of Berenike which facilitated trade between the Mediterranean and wider Indian Ocean world. Evidence for former Roman and *barbaroi* relations in the early-third century will also be considered in order to provide a useful parallel for understanding the relationships between the Blemmyes and those trading at the port.

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Zanzibar: Island and Coast

Zanzibar has long been known for its role as a focus of maritime trade in the networks of the Indian Ocean, but understanding and discussion of that role has altered substantially over the last 150 years. This paper presents a review of archaeological investigations of the Swahili on Zanzibar as a lens through which to consider shifting interpretations of the place of the archipelago in the Indian Ocean over time, and the relationship of such perspectives to changing archaeological methods and paradigms.

The discussion focuses particularly on the study of Unguja Ukuu, one of the earliest known permanent settlements of the Swahili Coast, a centre of maritime trade to and through the region, and an important example in discussions of the development of Swahili urbanism in the early second millennium. The town's past importance was noted by Portuguese and British colonials of the sixteenth and seventeenth centuries, and commemorated in its placename. Despite its lack of stonetown remains, the town's historical legacy meant that it was the site of some of the earliest antiquarian investigations of Swahili society, including a visit by Victorian explorer Sir Richard Burton. Over the last 40 years the site has become a key location for the archaeological investigation of Swahili ports and trade in the maritime systems of the Indian Ocean, and is now the focus of new research examining the nature of Swahili urbanism and resource exploitation. The long history of excavation and study at the site therefore provides a useful demonstration of changing methods of investigation on the East African coast, and a focus for considering the impact of theoretical paradigms upon the shifting interpretations of the Swahili littoral in the Indian Ocean world.

The authors will present a series of key case studies comparing the methods and interpretations of archaeological investigations to relevant local and regional sites; considering the underlying archaeological priorities and Indian Ocean paradigms which have shaped these studies; and discuss current developments regarding the field of archaeological and heritage studies on Zanzibar.

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The Lobu Tua site of Barus, an early settlement in the Indian Ocean coast of Sumatra

Camphor has long enjoyed a world renown for its fragrance and alleged therapeutic virtues. The most productive tree, native to insular Southeast Asia, was sought out in Brunei and northern Sumatra at Barus, which became the center of its trade until the nineteenth century, when a synthetic equivalent became available. Barus is situated on the west coast of Sumatra along Indian Ocean.

Archaeological excavations in Barus to search for the ancient city have not been easy because the remains (Muslim tombs, shards of glass, pottery or ceramics) are distributed over a wide area. In the mid-nineteenth century the Dutch, who then occupied the coast, experimented with pepper plantations, in a little inhabited place of Barus, called Lobu Tua. Two epigraphs were discovered there (in the form of inscriptions on stone), along with a large number of other objects, some of which, jewelry and gold currency. The looting continued for more than ten years. The epigraphs were saved, one was written in Tamil and the other in Javanese and dated back to the 11th century.

Several archaeological research projects conducted by Ecole Française d'Extrême-Orient (EFEO) in cooperation with the National Centre for Archaeological Research and Development of Indonesia (PUSLIT ARKENAS) have contributed to better understand the history of Barus.

Excavations directed by Claude Guillot on Lobu Tua, the earliest site of Barus, brought to light a large range of artefacts among which glassware, glazed and unglazed earthenware from Islamic world, Iran, Egypt or Syria, Indian earthenware. But the most numerous items are Chinese ceramics with about 17000 sherds. It consists of Zhejiang, Jiangxi and Guangdong productions.

These excavations revealed that Barus at that time, called Fansur in Arabic, began its existence in the middle of the 9th century and ended it, very suddenly at the turn of the 12th century. The city was largely occupied by "Arab-Persians" and Tamils from Sri Lanka and India, and the only "indigenous" community present was the Javanese who benefited from the camphor trade.

After the abrupt end of Lobu Tua, the excavations of other sites of Barus notably Bukit Hasang, have revealed through a large corpus of wares, that the city was still active up to the 19th century.

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The art of the Qur'an in the Indian Ocean World

Throughout the Islamic world, from Morocco to Mindanao, the text of the Qur'an is unchanging, serving as a beacon of unity across cultures, languages, and ethnic groups. But the physical manifestation of the Qur'an – the manuscripts which serve as the vehicle for the text of the Divine Revelation – exhibit extraordinary diversity, with varying book formats reflecting the range of writing and aesthetic traditions of the cultures which produced them. At the same time, the production and decoration of Qur'an manuscripts was generally approached with conservatism and a careful avoidance of any hint of innovation. Thus in many cultures Qur'anic art is highly conformist, allowing the identification of the precise origin of a Qur'an manuscript on the basis certain graphic conventions known to be rigidly adhered to within particular regions. On the basis of a large corpus of manuscripts, it has therefore been possible to identify clearly a number of distinct regional schools of Qur'anic illumination in Southeast Asia, including in Aceh, on the east coast of the Malay peninsula, in Java, and within areas associated with the Sulawesi diaspora.

Looking eastwards from Southeast Asia along the Indian Ocean littoral, from the southern coastal regions of India and the Arabian peninsula through to east Africa, it is possible to discern certain congruities of colour, form and proportion. The pool of evidence is restricted, sometimes to a single manuscript, which nevertheless hints convincingly at artistic connections, through mechanisms which at present are not fully understood. This paper will document and explore these nodes of connection between Qur'an manuscripts of Southeast Asia and those from the broader Indian Ocean world.

Alessandro Ghidoni

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The ship timbers from al-Balid, southern Oman. Technologies and materials of the Indian Ocean sewn watercraft in the 10th-15th centuries CE.

Recent excavations in the citadel of the Islamic port of al-Balīd, in southern Oman (10th-15th centuries CE), have brought to light a large number of timbers, consisting of planks and beams of sewn vessels, recycled in the buildings of the site.

Our knowledge of sewn boats in the Western Indian Ocean during the pre-modern Islamic period (622 – 1500 CE) is limited. It relies on vague textual descriptions, rare iconographic evidence, ethnographic studies and rare archaeological finds. In light of this shortage of data, the boat timbers found in al-Balīd represent a unique collection within the context of the maritime technology in the Indian Ocean during this period.

The timbers show a wide variety of sewing patterns, techniques and materials used for the construction of the sewn vessels sailing in the Indian Ocean during the Medieval period. Some of the planks have preserved the sewing cordages, caulking material and decorative motifs carved and painted on their surface. Radiocarbon date analyses provide insights about possible chronological changes in construction techniques. Identification analyses of the materials, such as wood and luting substances, yield clues about the origin of the ships involved the maritime network and, more broadly, about the material trade in the Indian Ocean between the 10th and the 15th century CE.

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Imported Timber in the Medieval World

Ceramics, shipwreck cargoes and textual accounts are the common indicators for international Indian Ocean trade. This paper takes a slightly different approach and will explore the utility of the timber trade. Precious imported hardwoods from south and south-east Asia were highly prized in medieval Arabia and more resistant to damp and insect activity than the available indigenous softwoods. Teak was the wood of choice for the well-established Red Sea and Arabian Gulf's shipbuilding industry.

Despoliation was common practice when dynasties fell and palaces were plundered, but columns, capitals, large well cut masonry blocks, mosaic glass and even baked bricks were recycled if existing structures were no longer in use. Wood was easily transportable and if necessary could also be salvaged from shipwrecked vessels for use on land, for example roofing and as elements in the coffered, painted wood ceilings of Yemen's many early mosques. To illustrate this premise two case studies will be presented.

When the textual sources describe the Abbasid caliph al-Mu'taṣim's (r.833-842) foundation and choice of Samarra as his capital in 836, they itemise precious the materials used to decorate the interiors, citing their origins. The archaeological records confirm much of the narrative, but what they do not give are the logistics of acquisition. But, through painstaking research of the fragmentary materials that now lie in museum stores or serve as spolia in later structures, this mega-jigsaw can gradually be pieced together. When the author participated in digitizing the Victoria and Albert Museum's Herzfeld collection of Samarra finds in 2013/14 (funded by the British Institute for Studies in Iraq), two samples of painted wood from the principal palace, the Dar al-Khilafa, were analysed by experts at the Royal Botanic Gardens, Kew. Both proved to be fashioned in wood of the *Tectona* species, i.e. teak, thus confirming contemporary chronicles.

Between 2005-2015 the Great Mosque in Ṣan'ā' has been studied and conserved under the auspices of the Yemen Social Fund for Development (SFD). Its painted wooden ceiling in the main prayer hall has been recorded, dismantled, treated and restored by an Italian team from the Istituto Veneto per i Beni Culturali, under the supervision of their director, Renzo Ravagnan. With the information culled from these two projects this paper will explore the idea that identifying timber imports could be as useful a tool as ceramics in illustrating the extent of this international system.

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Travel itineraries and object cargoes: comparing networks of movement in the medieval Indian Ocean

Approaches to movement in the medieval world are traditionally of two types. Studies of trade focus on the movement of cargoes and objects, often accessed through archaeological assemblages. An alternative approach uses histories of travel and mobility as a way to explore networks and webs of connection. Yet these types of source tell somewhat different stories, which can be difficult to reconcile. In this paper we present the results of network modelling conducted on historical and archaeological data from the Indian Ocean world, as a way of exploring and understanding those differences. Traveller's itineraries from histories of the medieval Indian Ocean and archaeological objects seen as typical trade goods have both been modelled and quantified using Gephi, an open access software that enables network modelling and analysis. Here we present the results of this modelling and use them to ask questions about the nature of medieval connectivity, the ways that different groups experienced the Indian Ocean world, and the opportunities and challenges of different datasets.

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New Data from Madayi Fort Area (Payannur, Kerala, India). A preliminary Note.

During the years unsystematic surveys on the area under scrutiny by local advocational archaeologists has revealed a series of occupations from the early medieval period to the Colonial one. This discovery led to development of a joint international research program to explore these occupations. The location of this project is in the northern part of the Malabar coast. The fort of Madayi is located on an elevated laterite plateau overlooking the large Kuppam river delta and the Arabian Sea. These features would have allowed easy access for historic ships during medieval period. Artifacts, including potsherds, come from different locations within the larger plateau specifically from an artificially constructed tank, known locally as the Jewish Pond, and from the area of the old XV/XVI century fortress. Temporarily sensitive ceramic artifacts include TGP originating in present day Basra; Chinese Celadon from the northern Song Dynasty; and possibly few glazed pieces from the Arabian peninsula and/or the Red Sea area. Additional works, including excavations, are planned for the area together with archeometrical evaluation of the material evidence. Through this research, even if at preliminary stage, we expect to explore the cultural diversity of the occupations of the Madayi plateau during the Medieval period.

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Investigations at Sima, Comoros 2019

An investigation of the site of Sima (Anjouan/ Nzwani, Comoros) in June 2019, recovered evidence for the site's importance during the late 8th and early 9th century, as a trading entrepôt in the southern Indian Ocean. The paper will present the preliminary results of this research, including the range of imports, the archeobotany, and artifactual evidence. One key discovery that will be discussed is the presence of stratified rock crystal fragments from the 9th century, indicating the exploitation of Madagascan crystal at this date and its probable export to the Islamic world.

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Investigating the late Antique/Early Islamic transition in Bahrain

Excavations at various locations in Muharraq town and at Samahij, also on Muharraq, have uncovered evidence for occupation between the 7th-8th centuries. Previously, this phase of settlement on Bahrain has been little understood and the limited material recovered has been largely mixed with much later artefacts from the 19th-20th centuries. In-situ deposits have now been recorded, associated with shell processing around a well, and as a sequence of floors in a large building, potentially a church. The results of the excavations, which are still work in progress, will be contextualised in relation to the limited historical sources discussing this period, and how they contribute to understanding settlement in Bahrain. The implications of some of the material recorded for reconstructing Indian Ocean trade and other contacts will also be briefly outlined.

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Using Longquan Celadon to investigate the development of Indian Ocean trade

Longquan greenware porcelain (or Longquan Celadon as it is called in the West) is a beautiful and high-quality ceramic that was exported from China from the late Song through the Yuan to Ming periods. It has been found as far as East Africa, Iran, Turkey, the Eastern Mediterranean and the Gulf. As more archaeological evidence emerges we are able to understand more clearly how the trade in this ceramic began, how it developed, and how it ended. We are able to understand in more detail the trade networks along which it travelled and we are able to get a clearer insight into where it was purchased and used (from the Topkapı palace in the Ottoman capital of Istanbul to small farms in the Syrian and Iranian countryside). Increasingly it is clear that this beautiful ceramic is potentially of great importance to those who wish to understand the development of Indian Ocean trade (and especially China's role in that trade) during the key c 1150 to c 1600 period. This was a period when the volume of trade in the Indian Ocean appears to have increased notably.

This paper will consider the use of Longquan Celadon as a 'proxy' marker for this trade and discuss the way in which it can be used to help us understand the trading system. It will look briefly at issues of production (number of kilns, organisation of labour), transport (distributions around the Indian Ocean) and consumption (the range of archaeological sites on which Longquan Celadon has been found). Having examined these issues, the paper will propose a strategy for using Longquan Celadon might to gain a more holistic picture of maritime trade routes, while discussing some of the associated problems and challenges.

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Material cultures of writing in the medieval Indian Ocean world. On the reception of a palm leaf letter at the Mamluk court

This contribution centres on writing technologies in the western Indian Ocean before 1500; more particularly it explores the communicative role of writing supports in long distance, transcultural interactions. My paper focuses on late thirteenth century Mamluk Cairo and accounts of the receipt at court of what was ultimately an illegible letter from a Sri Lankan ruler. Contemporary accounts of this event nevertheless make the point that writing materials – in addition to the complex assemblage of things that sealed and wrapped finished letters, as indeed the envoys that carried them – are never simply passive carriers of a primary written meaning. Rather, the material qualities of writing are imbued with meaning and are themselves legible. This paper therefore explores the ways that the materiality of an ultimately illegible letter participated in the diplomatic mission, complementing and sometimes contradicting both the written text of the letter, as well as the oral parsing of the text offered by the envoys who carried it. In the process, this paper also contributes new material to our knowledge of the technologies of containment associated both with palm leaf documents as well as with Mamluk decrees. The Indian Ocean is well-known for having been a dynamic area of cultural interaction and exchange, this chapter is a reminder that writing materials and writing cultures more broadly were an integral part of these exchanges, and are deserving of our attention.

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The incense trade in the Indian Ocean, 7th-12th centuries

This presentation aims to reassess the frankincense trade in the Indian Ocean between the 7th and the 12th centuries. By combining the data collected in the medieval Arab textual sources, the objects linked to the use of incense and the botanical identifications, it is possible to reconstruct the trade routes.

Frankincense, the resin exuding from *Boswellia* trees, was a sought after substance in the Indian Ocean since early Antiquity. In order to reconstruct the frankincense trade routes, the identification of the production areas is a key point. Indeed, there are twenty-two species of *Boswellia* trees. Among them, the resin of *Boswellia sacra* is the most expensive and sought after, according to textual sources. This resin can only be found in the South of the Arabian Peninsula. However, resins of other species were also traded, either because they were cheaper or because they could be sold as fake frankincense. Different methods have been set up to avoid fraud by the muḥtasib i.e. the authorities in charge of trade control. This sought-after substance is sometimes described in medieval textual sources by geographers and botanists, but many errors occur identifying the species or the geographical origins, due to the lack of knowledge at the time. Moreover, resins are scarcely ever found in archaeological contexts because of preservation issues and also because being of great value, they were not wasted. When they are exhumed on site, archaeologists are challenged with the identification of the resins. Therefore, how can we reconstruct the trade routes without residues? To address this matter, we will investigate the containers and the objects designed to burn incense or use perfumes, especially incense burners. Indeed, these objects testify to the use of aromatic substances outside their areas of harvesting or production.

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Sister seas: links between African Red Sea ports and the Gulf region from the Ottoman to the modern period

The paper will consider links between African countries bordering the Red Sea and the Persian Gulf and Western Indian Ocean within the 15th through 17th centuries AD, based on recent fieldwork and records. It will consider case studies in two different periods: Ottoman and modern.

We will present work in progress to put forward hypotheses concerning spatial aspects within the Red Sea/Gulf of Aden/Persian Gulf region through the western Indian Ocean network. We will focus specifically on the blue/turquoise ceramic wares generally called 'Sasanian-Islamic,' widely dispersed from the Persian Gulf to East Africa. We will consider the role of African sites within the southern Red Sea and Gulf of Aden within this network, focussing on the continuity and possible developments over time:

1. How such material moved from the Gulf to the Red Sea African coast and its inland sites (by merchants or pilgrims?).
2. The likely way(s) in which trade was organised (e.g., 'direct' or 'down-the-line').
3. Their ports of origin, the shipping routes involved, and other possible means of transportation and interaction.
4. Evidence for the source or sources of the origin of these wares.
5. Ethnographic evidence for the more recent presence of Indian traders and commodities traded.

The first case study will focus on the 'Sassanian-Islamic' wares recovered at Suakin dating from the Ottoman period, with particular reference to their possible origins, and the means by which they could have reached Suakin. Both archaeological and secondary historical evidence will be used.

These archaeological/historical investigations will be complemented by the second case study based at Suakin, on ethnographic study about the modern trader communities who were living in the port in the 19th and early 20th centuries, trading rather in perfumes, silk, sandalwood, and perfumed oil.

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The Tana Delta in the Indian Ocean trade network, archaeological evidences of local and global interactions in a Kenyan coastal hinterland

This PhD thesis is interested in reconstituting history of a Kenyan coastal region poorly known: the Tana Delta. G.Abungu and F.Chami showed the importance of deltaic areas in East-Africa as hinterland for coastal urban trade centres. However, we still know little upon the past occupations in these regions. Despite works on the Tana River during the 1980's, there is a lack of archaeological data about the past inhabitants and the past environment in its deltaic area.

My ongoing study proposes to interrogate the potential role of the Tana Delta in the Indian Ocean trade network. Simultaneously, the excavated artefacts could give a chance to understand the Tana Delta for itself, beyond its role of hinterland. Based on the data gathered during the missions 2018 and 2019, I suggest to take the delta as a specific entity with its own economic and social interactions.

Considering the fieldwork still in progress, this communication presents an overview of the previous fieldworks results. After a general presentation of the objectives and the current state of research, I will present the main data collected up to now in the Tana Delta, and finish with a specific focus on a previously unknown medieval archaeological site: Sango farm Mtetemo.

This site, test excavated twice, gives an insight of an active rural place. Tana Tradition potteries, beads, slags and bones are part of the material found on this site, opening to a succession of questions. The presence of this pottery interrogate the place of Mtetemo into the wide East-African network. The range of unearthed beads associated with ceramic beadgrinders make me hypothesize that Mtetemo was a bead-making place. The unearthed and collected material interrogate the environment of the site found in the vicinity of the Lake Shakababo. Indeed, iron slags and faunal bones (cattle and fish mostly) conduct to question the possibility of a local production for a local network, exploiting the surroundings (water bodies, trees, etc.). Although insufficient, these first results enlighten the potentiality of a reflection upon the Tana delta taken as a hinterland and a particular entity.

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Production and consumption of Iron on the northeastern coast of Madagascar during the 11th to the 15th century

On the northeastern coast of Madagascar used to live an Islamized population so-called Rasikajy (7th - 17th century). Three excavation and survey campaigns undertaken between 2017 and 2019 showed that this population settled all along the coast between the modern cities of Diego Suarez and Antalaha. The distribution of these settlements shows a much denser population than what was known and described in the literature. Objects found in tombs or in settlements demonstrate that the Rasikajys actively participated in the large medieval trade of the Indian Ocean. These campaigns also confirmed the presence of iron production workshops between Vohémar and Antalaha which define a metallurgical district. The study of the Rasikajy's iron production could thus allow us to understand technology transfers and commercial contacts with other trading populations in the Indian Ocean (from East Africa to China via India and Arabia).

Hence, after a detailed study of the archaeological remains and the analysis of the waste (slag, tuyere, etc.) we can now reconstruct the structure of the furnaces. They were bowl furnaces with a single tuyere and small walls made of sand. Bellows were also probably used. This very basic technology could allow the reduction of lateritic ores available in the surrounding hills: small ferruginous concretions were crushed on an anvil before being piled up inside the furnace. The use of lateritic ores contrasts with what was described in the previous literature. Indeed, previous literature assumed that the ores used on the northeast coast of Madagascar were black sands, magnetite and ilmenite rich. Our analyses show that these sands could not be used as ores but rather these small lateritic concretions.

From one workshop to another, technological variations can be observed. However, these variations are small and could correspond to local variability. This tends to demonstrate the use of a same technology throughout the period of metallurgical production, between the 11th and 15th centuries AD.

Thanks to the study of metallurgical wastes and in particular slags, we were also able to estimate the total quantity of iron produced. It would appear that the quantities of iron produced over the entire period correspond to a seasonal activity which covered local iron needs.

Moreover, the last survey campaign allowed us to identify smithing slags in settlements or stone quarries. Unfortunately, no smithing workshop has been found until now. The absence of production workshops between Vohémar and Antalaha but the presence of iron objects and forge slag seems to indicate an interaction between two distinct areas. On the one hand, there would be a metallurgical production district to the south of our study area, coexisting also with consumption sites, and, on the other hand, only metal consumption sites to the north.

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Petrology and Medieval Indian Ocean Trade: Studying Amphibole-bearing Softstone Vessels and Quarries in Northern Madagascar

During the Medieval Period (starting approx. in the 7th c. CE), Northern Madagascar was settled by the Islamised *Rasikajy* population, attested by the discoveries of several sites along both the eastern and the western coast. The archaeological record of this period yields abundant findings of local and imported ceramics (including Sassanian and *Sgraffito* ceramics, as well as porcelain and pearls from China and India), iron smelting slags and turned softstone pots, most of which were discovered in the famous cemetery site of Vohémar. Up to this day, it remains highly debatable if these vessels were destined mainly for local use or produced for exportation, as Madagascar is believed to have been only scarcely populated during that era.

While *Rasikajy* settlements are only reported along the coast, extraction and first brute shaping of these pots was carried out in quarries in the crystalline hinterland. Final lathe-turning was thought to have been performed in coastal manufacturing centres, but we acquired first evidence for finishing both in a coastal settlement and at a quarry itself.

Up to now, we visited 25 of these quarries and sampled them systematically. Additionally, the large quarry site of Bobalila was recently excavated for the first time, producing promising results that improve the understanding of extraction and production technology and geological properties of the raw material. Due to the textural complexity and heterogeneous nature of this rock, we use a combined approach of texturally controlled microanalytics, bulk rock chemistry and optical parameters for the characterisation of the quarried localities. The aim of this study is a detailed petrographic and geochemical characterisation to allow subsequent provenance applications.

Establishing a petrographic and taxonomical database of quarries and artefacts allows the tracing of shipping routes both in Madagascar and especially along the Indian Ocean Trade network. Malagasy vessel fragments found abroad are easily identifiable, as the occurrence of amphibole distinguishes this rock type from conventional soapstones exploited e.g. in Iran, Oman and Yemen, where the tradition of producing and exporting lathe-turned stone vessels exists since several millennia.

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Arabic manuscripts from a royal Javanese library: some remarks on the transmission of books and texts across the 18th century Indian Ocean

Studies of the manuscript cultures of Southeast Asia have tended to privilege works written in 'local' languages such as Malay and Javanese, whereas Arabic has been seen as an alien language restricted to the religious realm. In this paper, I seek to challenge this view by an examination of the library of the royal court of Banten, in northwestern Java. The library, which was captured by the Dutch at the beginning of the nineteenth century and is today housed in the National Library of Indonesia, comprise some 159 volumes, almost entirely written in Arabic. This paper examines the contents of the library with a view to understanding which texts it includes, where they were written and copied, and what their place may have been in the broader political and religious climate. The library contains an admixture of Middle Eastern and Indian mss, along with numerous Arabic works composed or copied in Java specifically for the royal library. Examination of the data these mss contain with regard to place and date of copying can provide insights into the trade in manuscripts and the patterns of transmission of knowledge from the central Islamic lands to Java. Moreover, ownership marks and ijazas can inform us about scholarly networks. Certain works were evidently of especial interest to the sultans as they were used for marking the dates of birth and death of the royal family. While attempting to give an overview of the key characteristics of the Banten library, this paper will attempt to highlight material aspects of the manuscripts. Middle Eastern manuscripts preserved within the library are often found furnished with a second larger format copy made in Java, often (but not always) furnished with an interlinear pegon (Arabic script Javanese) translation. This raises the question of the purpose of these second, large-format copies, as well as the choice of works singled out for such treatment. I attempt to situate the material aspects of these texts in a more general understanding of the cultural and performative role of manuscripts. Overall, the paper hopes to assist reaching a new understanding of the ways in which the manuscript cultures of the Middle East and Southeast Asia interlocked and interacted as seen through the Banten collection.

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Archaeological investigations around the port and shipwrecks of Kilwa, Tanzania, and the information recovered on Indian Ocean trade

Indian Ocean trade involving the Swahili Coast of eastern Africa has been recorded at least as far back as the Classical period with seasonally reversing monsoon winds providing the reliable sailing conditions. This presentation focuses on maritime archaeological survey around the World Heritage Site of Kilwa Kisiwani in Tanzania, one of the most important sultanates on the East African Coast, and investigates its place in the Indian Ocean trading system during the medieval period. In the late 1st millennium AD, archaeological investigations and historical records of ports from Kenya to Mozambique suggest the northern Swahili coast was dominated by trade from The Gulf and western India. The proportion of Far Eastern imports compared to Middle Eastern increases in the southern Swahili coast perhaps reflecting more valuable items were carried further along the coast or there was an alternative route via southern India and/or Madagascar. A zone of low imports south of Unguja (Zanzibar Island) and north of Comoros that includes Kilwa suggests a different maritime outlook and exploitation of the sea in this area. However, Kilwa's place on the trade route is exposed by intertidal ballast on the fringing reef associated with 8th- to 10th-century storage jars from Iran suggesting a shipwreck on the east coast of the island. The Kilwa Sultanate was established in the 11th century and during the 13th to 14th century, Kilwa controlled the gold trade from Great Zimbabwe that reached the coast at Sofala in modern Mozambique. This wealth can be seen in the growth of the town and surrounding settlements with mosques, stone houses and palaces overlooking the ports and landing places. The imported pottery excavated in the port increases during this period with Far Eastern wares becoming as common as Middle Eastern by the 14th century. Nonetheless, underwater investigations off the central port at Kilwa has recorded an incense burner, Islamic monochrome bowls, a stone anchor and a spread of ballast suggesting another shipwreck engaged in Middle Eastern trade from the 13th to 16th century.

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More a Wave than a Boom: Intensification of Exchange in the Southern Gulf from the Rise of Hormuz to the Modern Era

The 'Hormuzi economic boom' was coined as a phrase in an article published by Derek Kennet in 2002 to account for the generative capacity of Hormuz in stimulating the economy of the southern Gulf area between the 14th to 16th centuries. The rising prosperity of neighbouring regions such as the Shimal plain in Ras al-Khaimah were charted on the basis of various indexes: growing volumes of rural settlement and the increasing refinement, mass-production and diversity of ceramic products from the Julfar Ware kilns near Wadi Haqil. At the time, the long-term settlement record for Ras al-Khaimah retained significant gaps with only limited survey data filling the span following the decline of Julfar in the late 16th/early 17th century. Current work being undertaken by this author on the large body of ceramic finds from the 18th - 20th century coastal town of Jazirat al-Hamra together with a new study of material from al-Nudud (part of ancient Julfar) unearthed by the Beijing Palace Museum Archaeological Institute provides the opportunity for a fresh appraisal. The influence of Hormuz - at one time one of the most prosperous port cities in the Indian Ocean - remains a plausible explanation. What is less clear is whether this stimulus was strictly time-limited. An alternative hypothesis is that the long-term upward trajectory continued well beyond the period of Hormuz thus, partially at least, decoupling the direct causal connection. These issues will be examined on the basis of current research on ceramic finds from Ras al-Khaimah.

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The Batu Aceh tradition: Islamic carved tombstones in the early modern Indian Ocean world

Batu Aceh, or 'Aceh stones', is a group of 15th- to 19th-century Islamic carved tombstones widely distributed across Maritime Southeast Asia, from as far as Pattani (southern Thailand), Peninsular Malaysia to South Sulawesi (Indonesia). It represents the emergence and transmission of a new and distinct cultural expression of Islam in the early modern world against the background of the epoch of the great Islamic empires – the Safavids, the Mughals, and the Ottomans. While Batu Aceh is closely associated with the rise of the Sultanate of Aceh in the mid-16th century, the origin of the tradition has been broadly located to 15th-century Northern Sumatra. Existing scholarship on the tradition is predominantly based on examples found in Peninsular Malaysia and largely focuses on inscribed gravestones.

Between 2015 and 2017, the Earth Observatory Singapore (EOS) and the International Centre for Aceh and Indian Ocean Studies (ICAIOS) conducted a survey along a 40-km section of the northern coast of Sumatra, across Banda Aceh and Aceh Besar. This paper presents several preliminary findings of over 5,200 carved gravestones found at the supposed birthplace of the Batu Aceh tradition. Combining approaches from epigraphy, art history and technology history, the research project aims to shed light on the origin, development, and spread of this tradition in relation to the broader Indian Ocean world.

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Archaeologies of enslavement and non-elite identity in Swahili urban societies

The large group of people commonly known as the Swahili occupied an expansive stretch of coastline between Somalia and Mozambique from the 6th and 7th centuries CE, with early villages built using wattle and daub while later settlements also included stone structures such as tombs, mosques, and private houses. Increased involvement in long-distance trade, urbanisation, and religious developments led to an increasingly hierarchical social structure in many Swahili societies, which included forced labour and servitude. Archaeological considerations of these social structures have only recently become the focus of attention however, leading to a paucity in our knowledge of the majority of inhabitants in Swahili towns in the past. In this paper, I aim to highlight the current potential and limitations for studying social inequality, and slavery in particular, in the centuries preceding Portuguese colonisation of the East African coast (ca 1100 to 1500 CE). Through studies of local and imported material culture, architecture, and food remains, we can begin to understand the different ways in which people maintained, negotiated, or opposed social status in their daily lives, and the varied social identities intersecting with status and social differentiation. This study will focus particularly on Zanzibar with a view towards understanding structures of socio-economic differentiation and labour, and how dynamics of local, regional, and international exchange impacted social relationships and structures. It is partially based on recent fieldwork at two archaeological sites in north-west Zanzibar: Mkokotoni and Tumbatu. Tumbatu is a well-preserved stone town site with extensive coral stone architecture situated on a small island next to Unguja main island, while Mkokotoni is a smaller but significant neighbouring site with mixed architecture, situated just across the channel from Tumbatu. The two sites indicate a complex local economy simultaneously linked to wider Indian Ocean networks and a potentially large culturally and socially mixed population occupying both sites at the same time. Viewed together, the two sites highlight the production and livelihood strategies of both elite and non-elite peoples inhabiting two distinct areas of occupation, separated by a narrow ocean channel that could both facilitate and restrict contact between the two sites.

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Local ceramics from the medieval Islamic trade centre of Harlaa, Eastern Ethiopia (10th – 14th century AD) – An Overview

The site of Harlaa is located in Eastern Ethiopia, in the vicinity of Dire Dawa. Excavations have been undertaken at Harlaa from 2015 to 2019 as part of the 'Becoming Muslim: Conversion to Islam and Islamisation in Eastern Ethiopia' ERC-funded project (BM694254-ERC-2015-AdG), under the direction of Professor Timothy Insoll. Despite being located about 150 km from the coast, the site shows evidence for extensive participation in the Indian Ocean trade from the 10th – 14th century AD. This paper will focus on the previously unstudied locally produced ceramics from Harlaa from both before and during Harlaa's involvement with The Indian Ocean trade and the introduction of Islam into the region. The key forms and wares identified in the local ceramics will briefly be highlighted. Changes visible in the local ceramics across the phases of occupation at Harlaa will be considered with regards to the introduction and influences of access to the Indian Ocean trade network. The nature of these changes will provide insight into both the introduction of Islam and Islamisation at Harlaa as well as the manner in which access to the Indian Ocean trade network influenced the local ceramics, as it does not appear to be simple imitation of imported forms. In aid of this, local ceramics from other sites in the Horn of Africa which were also part of the trade networks will be briefly considered.

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Indian Glass in the Indian Ocean? New results and constraints from Medieval Indor (North India)

Glass beads have provided arguably the most eloquent evidence of historically specific Indian Ocean trading networks. The compositional specification of the origin of a majority of these glasses has established their origin from the South Asian subcontinent. Using LA-ICP-MS analysis over the last 15 years, trace elemental chemistry has been used to delineate several compositional groups that characterize the 'mineral soda alumina' (m-Na-Al) glass that is distinctive of the subcontinent. However, much of what we know of m-Na-Al glass still relies on analyses conducted upon samples recovered from sites in Africa and South-East Asia rather than from well-dated samples recovered at sites from the South Asian subcontinent itself.

This paper presents new results in the Archaeometry of South Asian glass by communicating the results of an extended program of analyzing glass vessels, beads, bangles and local glass-working debris from the site of Indor in the region of Mewat in North India. The paper introduces the key results of the Indor Archaeological Survey and Excavation project conducted since 2014-15 at this unique site, where a fortified city was built by the lineage who came to be called the Khanzada of Mewat soon after their conversion to Islam in the fourteenth century. The paper presents key information from the regional survey, excavations and intensive program of radiocarbon dating to contextualize the glass assemblage recovered from the Indor valley. The paper provides a description of the specificity of the different artifact classes (beads, bangles and vessels), the new typologies devised, the extent to which they can be seriated and the ways in which spatial, social and chronological differences in these artifacts are apparent.

The paper shall close with a detailed case study of blown glass vessels, an artifact not known from ancient South Asian glass-working repertoires, but one that is an exemplary product of Islamic glass assemblages. The paper will argue that as compared to beads, both glass bangles and blown glass vessels can help break down the Indian Ocean glass trade into a series of craft specific, historically marked movements of expertise and techniques, ideas and new cultural imperatives beyond the movement of objects alone. The evidence from post-conversion era Indor demonstrates how glass vessel shards betray phases of likely import and then experimentation, replication and even mixing that can be evidenced in vessels that were fashioned from both Plant Ash and Mineral Soda glass.

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New Archaeological Data on the Islamisation of the Malay Archipelago

Over half a century ago, I. N. Hume famously described archaeology as “the handmaiden of history,” subordinating it to the more ‘important’ activities of the text-based historian. For the student of Islamic history in the Malay Archipelago, however, for whom few written sources survive, archaeology bears a significance and relevance far beyond that suggested by Hume. That being said, the region’s archaeology remains regrettably understudied; while the ancient Hindu-Buddhist kingdoms of the Malay Archipelago and Southeast Asian mainland have received considerable attention down through the centuries, the region’s Islamic past remains barely explored. A perception even persists amongst some scholars that Southeast Asia in general does not constitute fertile ground for the archaeologist, its high humidity having either destroyed or rendered hard to recover any significant trace of the region’s past. By contrast, this paper will review a range of recent discoveries that clearly demonstrate the survival of a fascinating and highly informative array of Islamic artefacts in the Malay Archipelago. Focusing on the sites of four early Islamic kingdoms—Barus, Lambri, Samudera-Pasai and Brunei—the paper will concentrate on finds relevant to the region’s trade during the period of early Islamisation. Scholars agree that Islam arrived in the Malay Archipelago via the region’s trade routes; consonant with conversion, this paper will demonstrate that all four locations experienced accelerated commercial interaction with China, whose merchants were predominantly Muslim. Most notably, all four sites yield considerable amounts of Chinese pottery (except Samudera-Pasai, for which no ceramic evidence is available), pre-modern China’s principal export item. Over the same period, three of the sites, Lambri, Samudera-Pasai and Brunei, also saw the utilisation of Chinese artistic motifs in association with early Islamic artefacts. Most strikingly, Brunei provides strong evidence, not only of a much earlier sultanate than previously suspected, but of an influential connection with the major Chinese port of Quanzhou. While it shall be continually stressed that the presence of Chinese trade items and/or cultural influences do not, in themselves, establish a Chinese (Muslim or otherwise) presence in the selected locations, they do demonstrate that the Malay Archipelago’s first Muslim kingdoms emerged within an environment suffused with Chinese trade goods, at a time when Chinese cultural influences were being freely adopted by the local Muslim population. This begins to challenge the still dominant view of the Malay Archipelago as a mere extension of the Indian Ocean.

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Chinese and Abbasid ceramic exchange, 8th -10th centuries CE

This presentation shows the distribution of five main types of Chinese wares found at sites in the core area of the early Abbasid Empire. Not all Chinese ceramics found in the Islamic world were luxurious wares only afforded by a small group of elites, nor were they the sole result of trade between the Chinese Tang and Muslim Abbasid Empire. Besides, new archaeological finds excavated by Chinese archaeologists in recent years demonstrate a two-way influence between Chinese ceramics and their Islamic counterparts, rather than a one-way influence of Chinese ceramics on early Abbasid glazed wares.

Illustration:

Chinese green glazed ware found in Nishapur, the Metropolitan Museum of Art, Accession Number

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A macronutrient-based model using carbon isotope ratios in dentine collagen and enamel carbonate reveals millet consumption by prehistoric Japanese populations

In Japan, the transition in subsistence from foraging to agriculture took place during Final Jomon (circa 3000 BP) to Yayoi (circa 2800-1800 BP). Archaeobotanical research suggests that the agricultural complex, brought to Japan by immigrants from continental Asia, included both millets (foxtail millet and broomcorn millet) and rice. Recent studies of the impressions on pottery surface have dramatically increased the detected number of millet grains, giving rise to the hypothesis that at the end of Jomon in Central Japan, millet agriculture was incorporated ahead of rice, after which mixed farming of millet and rice began. In some cases, stone axes and arrowheads are discovered along with millets, suggesting that much of their subsistence still consisted of foraging after millet farming began. We need a more quantitative evaluation of the diet during the Jomon-Yayoi transition for a detailed picture of how agriculture, especially that of millet, was incorporated by the Prehistoric population across Japan. One approach is the isotope analysis of human bones. However, isotopic signatures resulting from considerably small consumption of millet are difficult to distinguish from those of other food sources. This research attempted to find a new way to detect millet consumption by early farmers.

Collagen of human teeth excavated from Jomon and Yayoi sites in Central Japan was put to carbon and nitrogen stable isotope analysis. There was a statistically significant increase in the $\delta^{13}\text{C}$ of Final Jomon and Yayoi samples compared to Early-Late Jomon samples. The possible cause of this shift is the consumption of C4 plants with high $\delta^{13}\text{C}$ such as foxtail and broomcorn millet (C4 millet). Another candidate is marine shellfish with a similarly high $\delta^{13}\text{C}$. Although the samples were from inland sites, excavated items suggested exchange with coastal areas and the possibility of marine shellfish consumption remained. We built a model to distinguish millet and marine shellfish consumption based on the difference in the nutrients that collagen and apatite respectively reflect, and the contrasting nutrient makeup of C4 millet and marine shellfish. Carbon isotope values of collagen and the additionally measured apatite were consistent with the mixing model between C3 herbivores and C4 millet, where the contribution of the latter is 20-60%. This result is consistent with the hypothesis built on archaeological grounds. Our new macronutrient-based model testified that contributions of food sources bearing similar isotopic ratios but which differ in nutrient distribution can be distinguished using collagen and apatite.

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Discoveries and the Rise of Longquan Celadon in the Western Indian Ocean: A Preliminary Discussion

In recent years, the trade of Longquan celadon in the western Indian Ocean becomes a very attractive research question. Longquan celadon is considered as the most widely distributed and largely traded ceramic commodity among the Chinese imported ceramics in the area from Bangladesh to East Africa, before the 16th century AD. Based on a general picture, this paper aims to introduce the key discoveries, distributions and the rise of Longquan celadon trade in the Western Indian Ocean from the 13th to 16th centuries: over 100 archaeological sites are included, and based on this, the distributions and different chronological phases of Longquan celadon trade are discussed. In order to re-discuss the rise of Longquan celadon in the western Indian Ocean, this paper also further investigates the changing pattern of the late Iranni Sgraffiato and Longquan celadon in the western Indian Ocean market.

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