

Early Maritime Cultures in East Africa and the Western Indian Ocean

Edited by
Akshay Sarathi



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Early Maritime Cultures in East Africa and the Western Indian Ocean

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**Edited by
Akshay Sarathi**

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Prehistoric Settlements on the Red Sea Coast of Eritrea

Implications for assessing early human dispersals across the Red Sea basin

Amanuel Beyin

Department of Anthropology
University of Louisville, Kentucky, USA
E-mail: ammanuel.beyin@louisville.edu

Daniella E. Bar-Yosef Mayer

The Steinhardt Museum of Natural History
Tel Aviv University, Tel Aviv, Israel
E-mail: baryosef@tauex.tau.ac.il

Abstract

This chapter focuses on a region that encompasses the Gulf of Zula and Buri Peninsula along the Red Sea coast of Eritrea. Middle and Later Stone Age (LSA) sites uncovered from the area shed light on the exploitation of marine and coastal resources that sustained human populations during these periods. Two sites with Middle Stone Age (MSA) remains, namely Abdur - located on an elevated reef and dated to 125kya, and Asfet containing diagnostic stone artifacts that existed roughly 200 – 50kya demonstrate that the coast was visited, and may have served as stepping-stones of Ancient Modern humans during their spread from Africa into Asia, whether northward into the Levant or across the Red Sea into Arabia. In addition, three early to mid-Holocene (LSA) shell middens documented from the region reflect the exploitation of different coastal environments. Misse East and Gelalo Northwest were both dated to the eighth millennium BP. The presence of *Atactodea striata* (a bivalve that dwells in tidal flats near sandy beaches) and *Terebralia palustris* (a gastropod living in mangrove swamps) at the sites signifies that these molluscan organisms likely served as a supplementary food source. Gelalo Northwest also included a relatively large number of shell beads. Asfet Unit F, dated to the sixth millennium BP, was also dominated by *Terebralia palustris*. This coastal settlement is probably the result of adverse climatic conditions that prevailed in the hinterland during that period.

Introduction

In recent decades, there has been a growing debate about the timing and geographic routes along which early humans (archaic and modern) dispersed out of Africa (Beyin, 2011; Kopp et al., 2014; Groucutt et al., 2015; Reyes-Centeno et al., 2015). The time and locations of early human dispersals remain unresolved due to sparse archaeological and fossil evidence from the geographic regions essential for early human expansions out of Africa (for example, Horn of Africa, the Nile Valley and Arabia). Most of the evidence that has so far been recovered from these regions suffers from either poor chronology or dearth of fossil traces in association with the archaeological assemblages. Due to its pivotal location at the nexus of northeast Africa, the Arabian Peninsula and the Levantine landmass, the Red Sea basin is emerging as a vital region for assessing the temporal and geographic contexts of early human dispersals out of

Africa (Stringer, 2000; Walter et al., 2000; Bailey, 2009; Beyin, 2013). While our knowledge of early human settlement history along the Red Sea basin remains largely sparse due to insufficient fieldwork in the past, the few coastal sites known from the western peripheries of the basin (Walter et al., 2000; Beyin and Shea, 2007; Beyin, 2013) suggest that the region hosted multiple hominin occupation episodes from which at least some populations may have dispersed into Arabia and Southwest Asia.

In this paper, we discuss the role that the Red Sea basin may have played as a potential refugia and dispersal corridor for early humans spreading from the hinterlands of East Africa into the adjacent regions, such as Southwest Asia and the Arabian Peninsula. The discussion is supported by archaeological evidence accumulated from the Red Sea coast of Eritrea in the past 20 years (Walter et al., 2000; Beyin and Shea, 2007; Beyin, 2010). The considered sites, namely Abdur, Asfet, Gelalo and Misse, range in age from Middle to Later Stone Age (dating roughly 130–5kya), and are located along the central part of the Eritrea coast that encompasses the Buri Peninsula and Gulf of Zula (Fig. 1). This region is located at the nexus of three broad ecological zones: highland escarpments to the west, the Danakil depression to the south and the ecotonal plains adjoining the coastline. The working hypothesis is that, the riverine tributaries of the Ethiopian rift and the Danakil depression, which was once invaded by oceanic water from the Red Sea (Bonatti et al. 1971), may have once served as potential conduits for early human niche expansion out of the interior landscapes of eastern Africa. Prehistoric foragers successfully adapted to the Eritrean coastal plains may have subsequently served as source populations for dispersals into the Arabian Peninsula and Southwest Asia.

Theoretical Consideration

In a world that is more than 75% covered by water, coastal environments represent an important human landscape at the present times, and must have been vital settings for prehistoric human survival and interaction. Carl O. Sauer (1962) once referred to the seashore as ‘primitive home of man’ and described the role of aquatic settings in the following words: ‘Our kind had its origins and earliest home in an interior land. However, the discovery of the sea, whenever it happened afforded a living beyond that.’ Currently, there is growing archaeological evidence showing that coastal habitats played an important role in the course of human evolution as stable refugia and corridors of biogeographic expansion (Sauer, 1962; Erlandson and Fitzpatrick, 2006; Bailey et al., 2007; Marean et al., 2007; Cohen et al., 2012). Studies have shown that aquatic foods are rich in substances that may have had a strong impact on hominin physiology, gene expression and brain development (Erlandson, 2001; Joordens et al., 2009; Parkington, 2010). Moreover, the colonization of Southeast Asia, Australia and the Americas are some of the major events in human prehistory believed to have been accomplished by coastal routes and maritime crossings (e.g., Balme 2013, Erlandson et al. 2015). Dispersal along coastal and estuarine margins may have been successfully executed many times by prehistoric humans because such landscapes provide rich and diverse food sources for humans, and once dispersing foragers develop effective adaptive behaviors to a coastal habitat, the invention of new strategies is no longer necessary as they move along the coast.

Whether or not early humans exploited coastal settings habitually, and whether certain climatic episodes enabled human exploitation of coastal resources, is unclear. The earliest well-dated evidence for coastal adaptation by early modern humans comes from the site of Pinnacle Point (South Africa), dated to ~160kya, a glacial episode (Marean et al., 2007). More than a decade ago, Faure and colleagues (2002) proposed what is dubbed as *Coastal Oasis Model* (COM), according to which the decline in sea levels during glacial events is thought to have created fresh-water springs along the newly exposed coastal gradients (Figure 1B). Subsequently, such areas of fresh-springs (oases) would serve as viable refugia for humans and animals at a time when large parts of the terrestrial habitats experienced arid conditions. This hypothesis is based on the fact that fresh water is continuously discharged from the

continental aquifers into ocean and sea basins. These fresh-water springs often remain submerged during interglacial times, but during glacial times, the falling sea level would expose several of them and may in fact intensify their flow as a result of the removal of hydrostatic pressure from the shelf. While the model needs to be further corroborated by archaeological evidence (which unfortunately is often hard to uncover due to post-glacial submergence of Pleistocene coastal settlements; (e.g., Bailey et al. 2007), it provides a feasible baseline for developing coastal Paleolithic research in areas where human coastal occupations were likely to have persisted.

Historically, South Africa has produced compelling Pleistocene coastal archaeological evidence (Volman, 1978; Singer and Wymer, 1982; Marean et al., 2007), on the basis of which Parkington (2010) and Marean (2011) have put forth two alternative models regarding how the consumption of aquatic resources may have contributed to the development of complex human cognition. While Parkington argues in favor of the view that regular consumption of nutrient rich aquatic prey fueled the development of advanced cognition, Marean proposes that the development of advanced cognition preceded (and may have been a prerequisite to) systematic exploitation of aquatic food. Outside of South Africa, the Red Sea basin represents another promising region for investigating long-term patterns of early human coastal adaptation, and how coastal settings may have contributed to successful dispersal of our lineage out of Africa. Its location adjacent to famous hominin fossil localities in the Afar and Ethiopian rift basins lend well to its potential importance as a viable destination for Pleistocene hominins that underwent dispersal from the interior landscapes of Eastern Africa as part of niche expansion or ecologically induced displacement. Either way, early humans who reached the coast would have exploited the marine resources.

Current dispersal models for early humans out of Africa and the Red Sea basin

Most current models about early human dispersals out of Africa point to two possible geographic routes, namely the Northern Route (NR) and Southern Route (SR). According to the NR, the Nile basin is regarded as the principal corridor through which hominins dispersed from northeastern Africa up to the eastern Mediterranean Levant by crossing the Sinai land bridge (Tchernov, 1992; Van Peer, 1998; Bar-Yosef and Belfer-Cohen, 2001; Derricourt, 2005). In addition to the Nile corridor, some researchers have proposed another northward dispersal route along the central Sahara up to the Maghreb and Mediterranean coast (Osborne et al., 2008). The SR model proposes a direct route of hominin migration from NE Africa into Southern Arabia via the Strait of Bab al Mandab (Kingdon, 1993; Lahr and Foley, 1994; Mithen and Reed, 2002; Macaulay et al., 2005; Field and Lahr, 2006; Mellars, 2006; Chauhan, 2009; Oppenheimer, 2009; Armitage et al., 2011). The main support for this route comes from genetic studies (Ingman and Gyllenstein, 2003; Macaulay et al., 2005; Thangaraj K et al., 2006), showing close mitochondrial DNA similarity between East African and some native populations of Southeast Asia. Moreover, recent archaeological reports from the Arabian Peninsula have shown close techno-typological similarities with MSA assemblages from NE Africa, indicating periodic cultural contacts between the two regions (Marks, 2009; Armitage et al., 2011; Rose et al., 2011; Crassard and Hilbert, 2013).

The SR across the Red Sea is further supported by indirect evidence that comes from a recent study concerning hamadryas baboon phylogeographic history (Winney et al., 2004; Fernandes, 2009; Kopp et al., 2014). The hamadryas baboon (*Papio hamadryas hamadryas*) is found exclusively in East Africa and western Arabia, and is the only free-ranging nonhuman primate in the entire Arabia (Kummer, 1995; Winney et al., 2004). Previously, it has been hypothesized that hamadryas baboons colonized Arabia in the Holocene (Kummer, 1995). However, a recent study of mtDNA variation among some Arabian and East African (Eritrean) hamadryas populations shows that these baboons did not colonize Arabia in the recent past nor did they use a northerly route via the Sinai land bridge to enter Arabian Peninsula. The emerging genetic data supports the hypothesis that hamadryas baboons reached Arabia via temporary

land bridges formed during glacial maxima along the Strait of Bab al Mandab. The likely time for hamadryas entrance to Arabian Peninsula has been estimated ~130–12 kya (Kopp et al., 2014). In all likelihood, whatever route used by the hamadryas baboon to cross the Red Sea basin must have been readily accessible to early humans. In other words, if primates could migrate across the Red Sea, there is no conceivable reason for early humans not to use the same route.

Whether the two migration routes were always accessible and preferable for early humans remains unclear. Due to environmental barriers associated with the aridity of the Saharan Desert, the central Saharan and the Nile routes may have been traversable only during wet climatic conditions (Beyin, 2006; Field and Lahr, 2006; Osborne et al., 2008). At times when the Sahara and the Nile corridor posed a risk to human expansion, either the SR across the strait of Bab al Mandab or the western margin of the Red Sea along the Eritrean-Sudanese-Egyptian littoral may have served as alternative routes of biogeographic movements between Africa and Eurasia. Extensive coastal plains could be exposed on the African side of the Red Sea during low sea-level events, particularly around the southern part, close to the Bab al Mandab area (Head, 1987), Figure 1. During such times, the width of the Bab al Mandab could be narrowed to less than 10 km in width, thus becoming shorter to navigate (Flemming et al., 2003). The COM described above provides a plausible scenario for early human adaptation along these vast coastal plains during glacial events. From the coast, some hominin groups could have launched successful dispersals northward into the Levant or eastwards across the Bab al Mandab. Although finding sites directly associated with the COM is not easy as most of the sites may have been submerged, thus making it difficult to evaluate the COM archaeologically, it should be possible to find later Paleolithic sites along the inland terrains near the active oases zones formed by hominin populations that retreated to the near coastal strand plains during the subsequent interglacials (Beyin, 2013).

Prehistoric Settlements on the Eritrean Red Sea Coast

Background

The geographic position of Eritrea adjacent to the major proposed dispersal routes for early humans, and possessing a long stretch of coastal landscape (more than 1000km) along the western margin of the Red Sea makes it an ideal place to search for evidence of prehistoric coastal habitations. The Stone Age record of Eritrea remained poorly known for much of its history due to protracted political instability in the region. Research opportunities were opened soon after the country declared its independence in 1991 (Abbate et al., 1998; Curtis and Libsekal, 1999; Pedersen, 2000; Schmidt et al., 2008). The first evidence for early human presence along the Red Sea coast of Eritrea has come from the site of Abdur (on the eastern margin of the Gulf of Zula), where lithic artifacts with MSA affinity and handaxes were found within an emerged coral reef terrace dating to ~125kya (Walter et al. 2000), Figures 2-3. Subsequent to the Abdur discovery, the first archaeological reconnaissance on the Eritrean coast took place in 2005 (Beyin and Shea, 2007), followed by two seasons of systematic survey and excavation in 2006. The survey covered approximately 400 sq km area in the Buri Peninsula and along the coastal plains of the Gulf of Zula (Figure 2). The Buri Peninsula is a thumb shaped landmass that protrudes northward into the Red Sea, and the Gulf of Zula, a narrow bay (~40km north-south and 6-14 km wide east-west) is situated between the Buri Peninsula and the Foro Plains to the west.

Survey and excavation of prehistoric sites on the Eritrean coast hoped to address the following specific questions: i) under what climatic conditions have the Buri and Zula coastal plains become attractive for Late Pleistocene and Holocene humans? ii) what economic and technological developments were associated with human adaptation of the Buri Peninsula and Gulf of Zula? iii) how were prehistoric

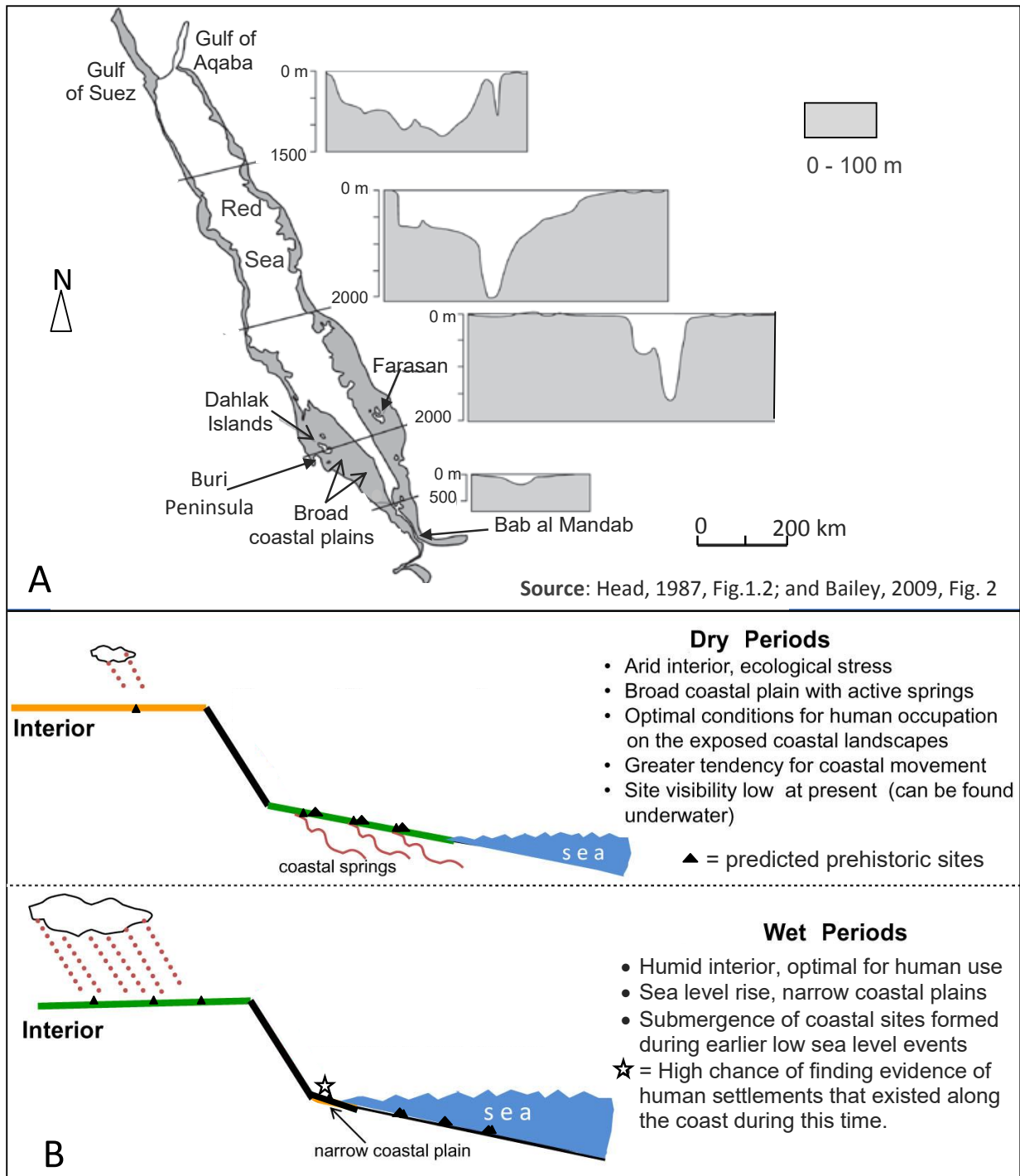


FIGURE 1. A: BATHYMETRIC MAP OF THE RED SEA SHOWING COASTAL PLAINS FORMED DURING AN ICE-AGE, B: A HYPOTHETICAL MODEL OF HUMAN SETTLEMENT DYNAMICS ALONG THE ERITREAN RED SEA COAST.

human settlements located with respect to the shorelines? , and iv) how does human adaptation along the Eritrean coast compare with other regions? The survey documented more than a dozen sites representing MSA, LSA and isolated Acheulian artifacts suggesting at least intermittent prehistoric human presence in the region. Sites were recorded from near coastal and inland landscapes. Three sites, namely Asfet, Gelalo NW and Misse East (Figure 2) were selected for excavation.

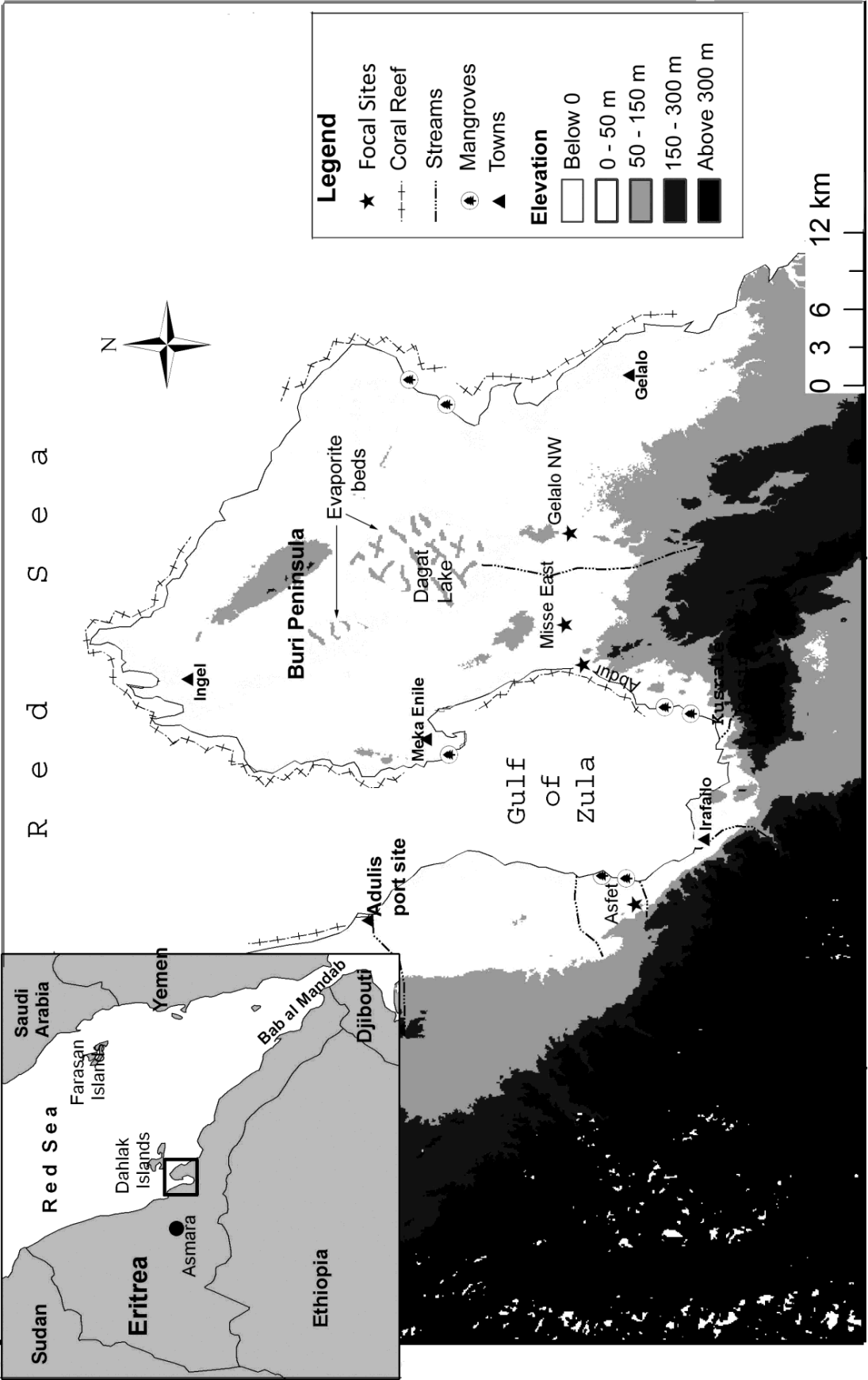


FIGURE 2. MAP SHOWING THE LOCATION OF THE STUDY AREA AND SITES DISCUSSED IN THIS PAPER.

The focal area (the Buri Peninsula and Gulf of Zula plains) occupies an important position at the confluence of three broad ecological zones: the highland escarpments to the west, the Danakil depression to the south and coastal plains adjacent to the seashore. At present, it is the driest part of Eritrea with growing period ranging below 75 days and precipitation less than 200 mm (Government of Eritrea, 1999). Plant cover consists of sparsely distributed halophytic *Acacia* communities, and low shrubs and grass (Yohannes, 2003). The geological history of the region had been greatly affected by the Tertiary and Quaternary tectonics associated with the formation of the East African Rift System (Barberi and Varet, 1977; Ghebretensae, 2002). As such, hot springs and volcanic inselbergs are common in the surrounding landscape. The northern, eastern and western peripheries of the Buri Peninsula feature meandering limestone cliffs, shallow beaches, promontories and sheltered bays. The shallow beaches and inlets may have presented prehistoric humans ideal fishing and shellfish harvesting grounds. The water salinity and tidal pattern of the Gulf of Zula is under the influence of monsoonal winds that blow from the Indian Ocean, and a few seasonal rivers that flow from the adjacent escarpments.

The archaeological data discussed in the paper comes from two Middle Stone Age (MSA) sites, namely Abdur and Asfet, and three LSA sites (Asfet Unit F, Gelalo, and Misse). What follows below is a brief description of the focal sites with an emphasis on their cultural and chronological contexts. Dates pertaining to the sites are shown in Figure 4.

Abdur

Located on the eastern coast of the Gulf of Zula, Abdur is the find-spot of stone tools and marine invertebrates in close association, embedded in a reef limestone terrace (Figure 3), dated to ~125kya BP (Walter et al., 2000; Buffler et al., 2010), Figure 4. The Abdur finding came to light in late 1990's during a geological survey by an international team of researchers (Walter et al., 2000). The reef terrace is ~ +11m thick, and belongs to a marine transgression event that covered a large part of the Buri-Zula plains at the onset of the Last Interglacial (MIS-¹⁵e). It overlies a volcanic layer referred to as the Abdur Volcanic complex dated to 2.12–0.17Ma (Buffler et al., 2010). Two kinds of occupation scenarios have been hypothesized by the Abdur team; one consisting of bifaces and cores of the Acheulian Industry associated with oyster beds and lag deposits, and the other featuring MSA blades and flakes on obsidian raw material associated with near-shore beach context. Large land mammals and marine invertebrates were found in association with the MSA occupation (Bruggemann et al., 2004). The discovery of bifaces and MSA tools in close geological association at Abdur suggests that the Acheulian and MSA tool making traditions continued to co-exist possibly because they both acquired a new, profitable use for the exploitation of diverse habitats, including the aquatic niche (ibid.). Since the raised Abdur beach terrace represents a relic of high sea level event during the Last Interglacial, the archaeological discovery signifies that hominin (modern humans and their ancestral lineages) habitation there occurred during or at the onset of a wet episode (in this case MIS-5e Interglacial phase).

Abdur represents the only well dated and widely publicized coastal Paleolithic site in the entire Red Sea basin. As such, despite some unsettled issues regarding the context of the archaeological finds, the site provides the oldest evidence of coastal adaptation by African hominins along the Red Sea coast prior to the generally accepted date for Late Pleistocene human dispersals out of Africa (Stringer, 2000; Mellars, 2006). However, it is unclear whether the evidence represents an isolated occurrence or part of a widespread coastal adaptation that existed along the Red Sea basin. Clarifying such a question requires investigating other near-coastal terrains along the Red Sea littoral. Moreover, the lithic technology at the site has not been properly examined hindering cultural comparison with other MSA assemblages.

¹ MIS = Marine Isotope Stage



FIGURE 3. NORTHERN SECTION OF THE ABDUR REEF LIMESTONE WHERE OBSIDIAN FLAKES ARE EXPOSED.

The identity of the hominin group that left their trace at Abdur also remains unclear. Given that the modern human lineage was already established prior to the Abdur date as attested by discoveries from the Omo Kibish and Herto in Ethiopia (White et al., 2003; McDougall et al., 2005), it is possible that the inhabitants of Abdur were modern humans. The site fell short of any further archaeological exploration after the initial field expeditions between 1999 and 2001.

Asfet Surface Middle Stone Age

The Asfet study area is located on the southwestern edge of the Gulf of Zula, ~1000m from the present coastline (Figure 5). The landscape encompasses a low-lying sandy basin between two north-south running basalt ridges that taper into a shallow drainage to the north. The western ridge rises higher, offering a good view of the nearby plain. Research at the site involved transect survey, mapping (topographic and surface artifact distribution), artifact collection, and on-site and museum artifact analyses. The site produced two kinds of assemblages, a surface MSA Industry, and an LSA one excavated

Site	Lab ID	Level	Dating Method	Original dates	Calibrated Age [€] (BP)
Abdur	-	-	U-Th mass [#] spectrometry	125 ± 7 kyr (1σ)	-
Asfet Surface	-	-	Diagnostic artifacts	150,000 – 50,000 (estimate)	-
Asfet Unit F	A0794*	1 (-6cm)	AMS	5385 ±15	5571-5662 (2σ)
	GX-32978**	2 (-21cm)	AMS	5350± 40	5475-5672 (2σ)
Gelalo NW	A0797*	C (-14)	AMS	7345 ± 20	7611-7749 (2σ)
	GX-32910**	A (-10)	Conventional	7890 ± 130	7953-8478 (2σ)
	GX-32911**	B (-8)	Conventional	6970 ± 170	6982-7658 (2σ)
	GX-32913**	C (-9)	Conventional	7900 ± 190	7826-8651 (2σ)
Misse East	A0796*	(-6cm)	AMS	7145± 20	7452-7564 (2σ)
	GX-32911**	(-5cm)	Conventional	7330 ± 190	7323-8039 (2σ)

FIGURE 4. DATES FOR THE FOCAL SITES. NOTE TO LAB ID SYMBOLS: *= ILLINOIS STATE GEOLOGICAL SURVEY (REPORTED AS UNIVERSITY OF CALIFORNIA-IRVINE IN PREVIOUS PUBLICATIONS), **=GEOCHRON LABORATORIES OF KRUGER ENTERPRISE, €= STUIVER, ET AL. 2005 (<http://CALIB.QUB.AC.UK/CALIB/>); # = WALTER ET AL. 2000; AMS = ACCELERATOR MASS SPECTROMETRY. THE RADIOCARBON DATES FROM ASFET UNIT F, GELALO NW AND MISSE EAST ARE ON MOLLUSC SHELLS.

from Unit F. This section deals with the surface assemblage, while the Unit F material will be discussed in the next section.

The surface assemblage is best characterized by stone tools featuring prepared core and blade technologies, the production of points (triangular, perforators, and small bifaces) and various retouched tools, signifying MSA technocomplex (Figure 6). The majority of the tools are made on locally available raw material sources with a primary emphasis on basalt (Figure 7). Good quality rocks, such as obsidian, chert and quartz were utilized, but comprise a small percentage. Two kinds of points are recognized: triangular flakes produced from Levallois cores (without much retouch), and those shaped through peripheral retouches into triangular or sub-triangular points and foliates. The diversity in tool size, shape and core morphology suggests that the Asfet toolmakers employed a broad range of core reduction and tool maintaining strategies. Terrestrial faunal remains were not discovered at Asfet, a situation attributed to a taphonomic bias. The discovery of numerous points, perforators and bifaces, however suggests that hunting and butchering may have constituted a vital part of hominin subsistence at the site.

Although the Asfet site lacks an absolute date, it shares similar diagnostic artifacts with dated MSA assemblages from the Afar and Ethiopian rift basins in the interior in which prepared core products, blades and a variety of points are the dominant components, Figure 8 (Wendorf and Schild, 1974; Clark, 1988; McBrearty and Brooks, 2000; Yellen et al., 2005; Shea, 2008). Assuming such similarities demonstrate cultural and demographic relationships between Asfet and the interior MSA settlements, hominin

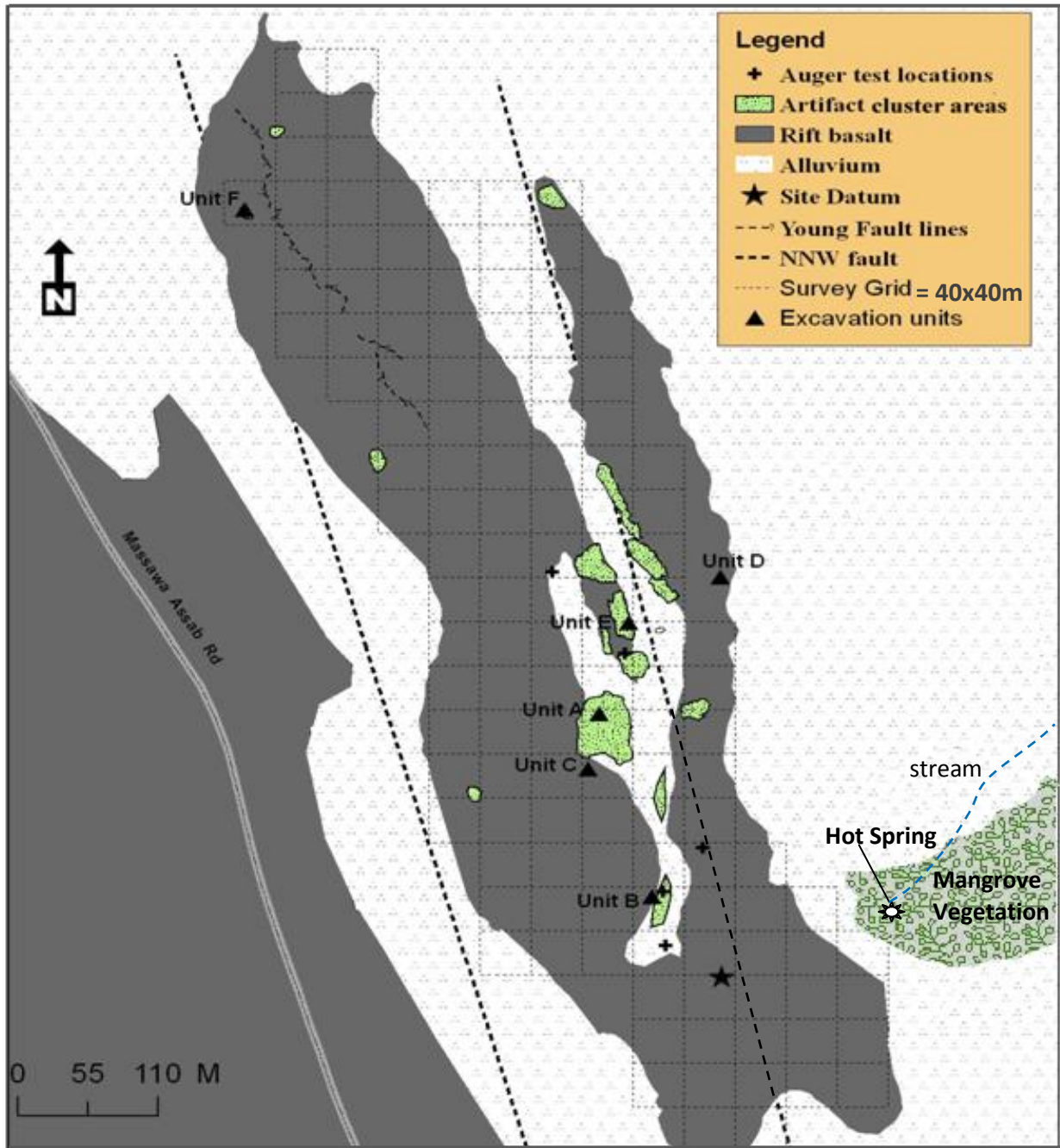


FIGURE 5. SETTING OF THE ASFET SITE, LOCATIONS OF TEST EXCAVATIONS AND SURVEY GRIDS USED FOR CONTROLLED RECORDING OF SURFACE ARTIFACT DISTRIBUTION.

occupation of the Asfet site may have occurred in the time range (a conservative estimate) anywhere between 150 and 50kya. The settlement at Asfet might have represented a northern extension of broad riverine adaptations by Late Pleistocene hominins along the Afar and Ethiopian Rift basins. Outside of the Ethiopian and Afar rift basins, there are two other regions, namely the Nile Valley and Arabian Peninsula, with which the Asfet assemblage shares broad technotypological affinity (Van Peer, 1998; Olszewski et al., 2005; Olszewski et al., 2010; Rose et al., 2011; Crassard and Hilbert, 2013). Of particular significance to this discussion are MSA entities commonly known as foliate points and Nubian Levallois cores, both of which were found at Asfet (Figures 6&8). Both of these entities are diagnostic elements of

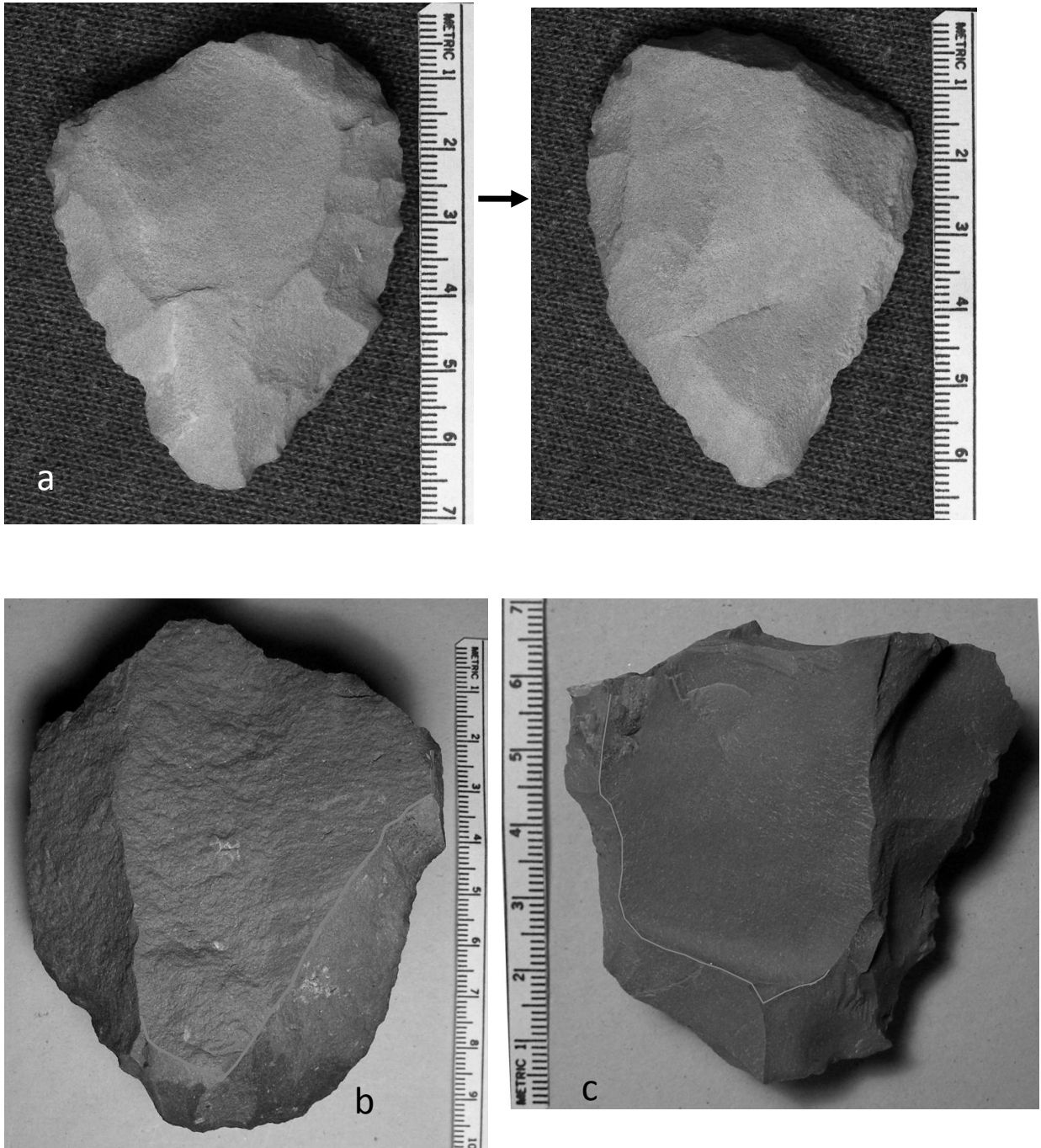


FIGURE 6. CORES FROM ASFET: NUBIAN TYPE II LEVALLOIS (A), PREFERENTIAL NUBIAN TYPE I LEVALLOIS (B), PREFERENTIAL-CENTRIPETAL (C).

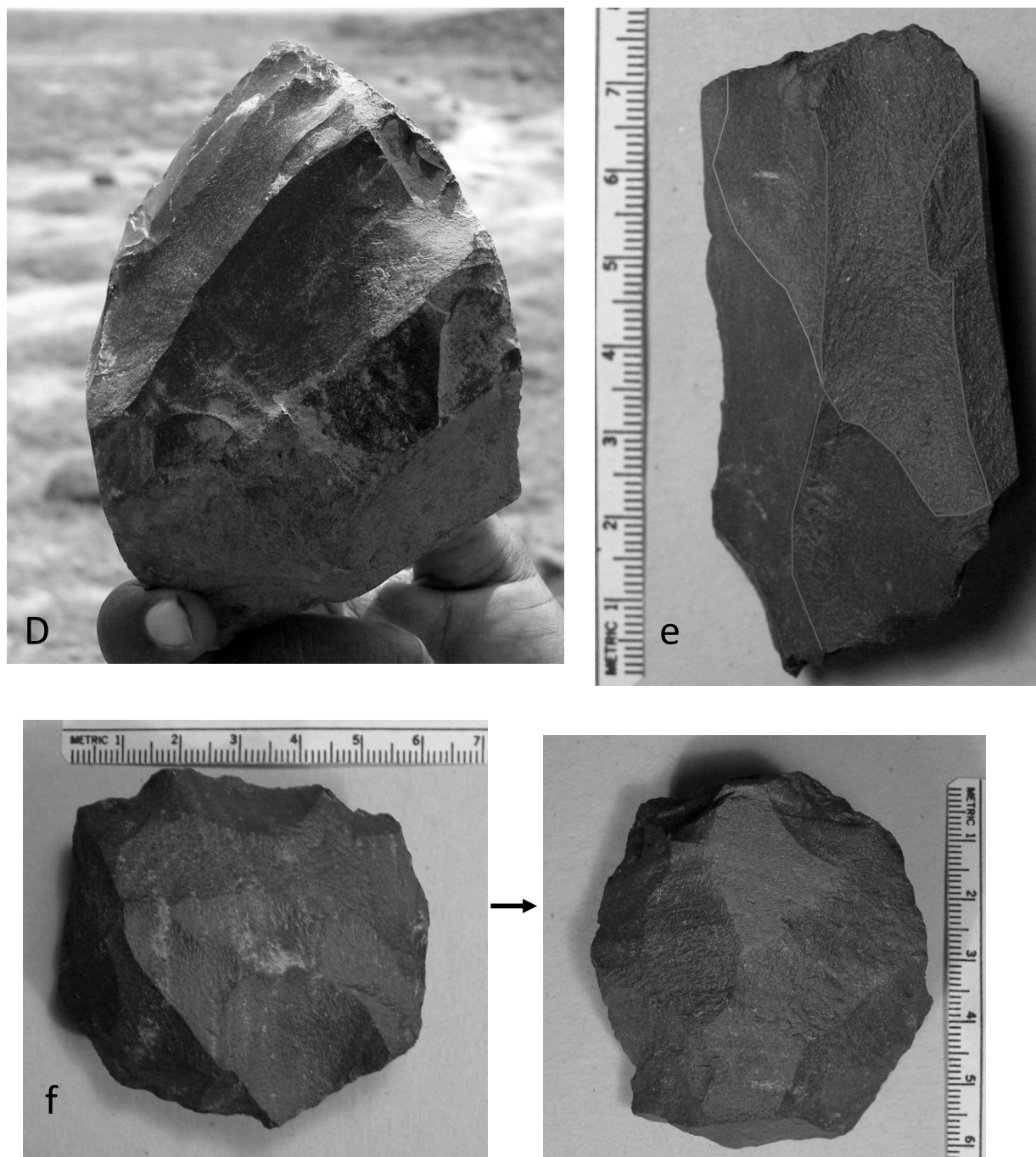


FIGURE 6 CONTINUED. CORES FROM ASFET: PRISMATIC BLADE (D,E), DISCOID (F).

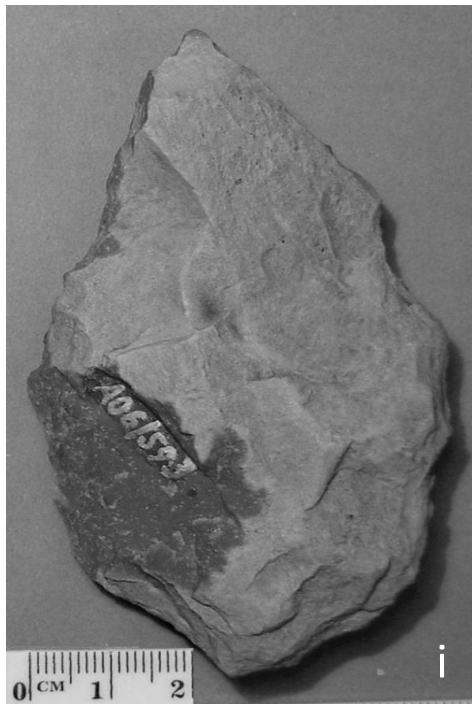


FIGURE 6 CONTINUED. SHAPED TOOLS: HANDAXE (G), OVATE OR SMALL HANDAXE (H), FOLIATE POINTS (I,J).

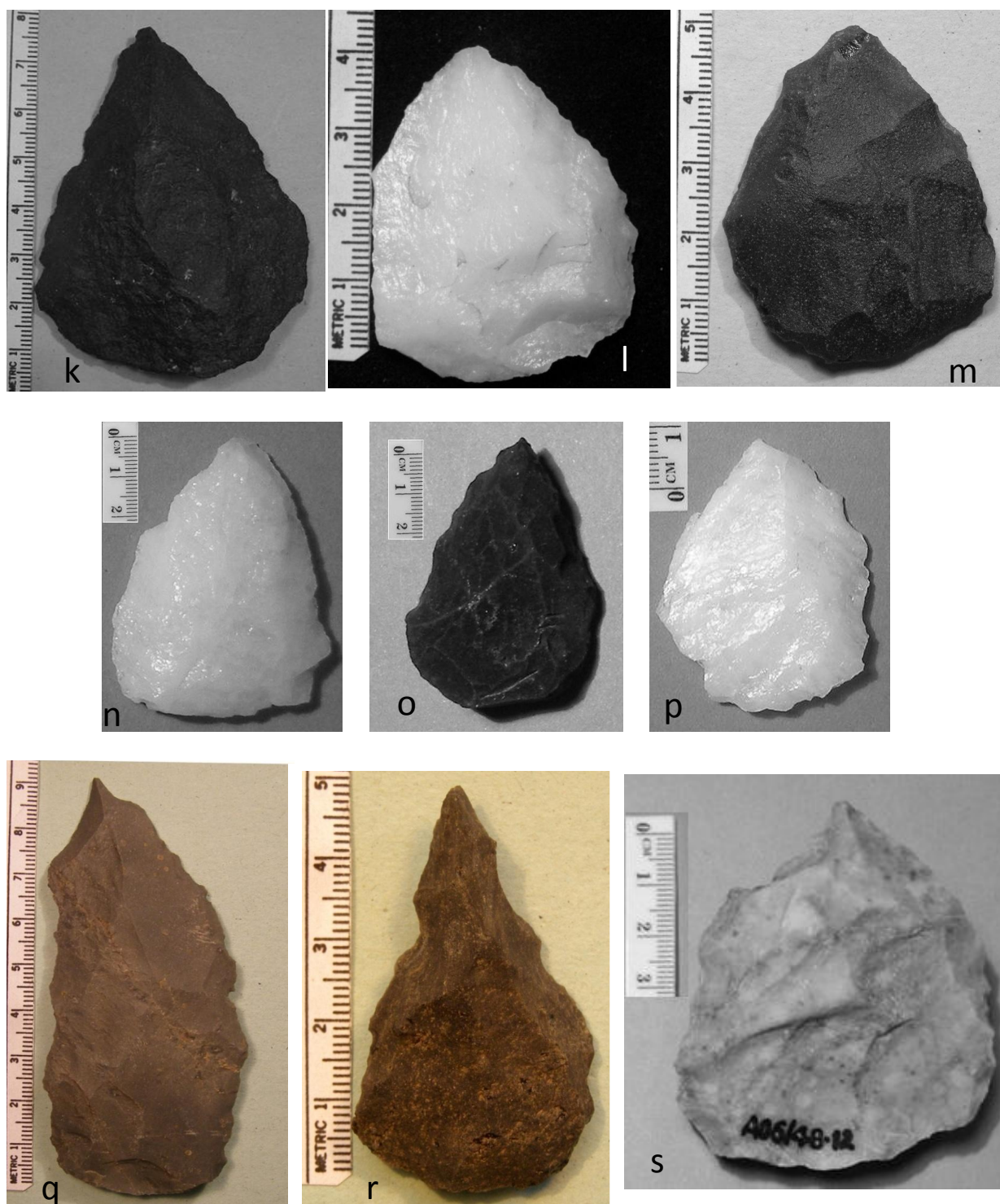


FIGURE 6 CONTINUED. CLASSIC MSA POINTS (k-p). ADDITIONAL SHAPED TOOLS: PERFORATORS (q-s).

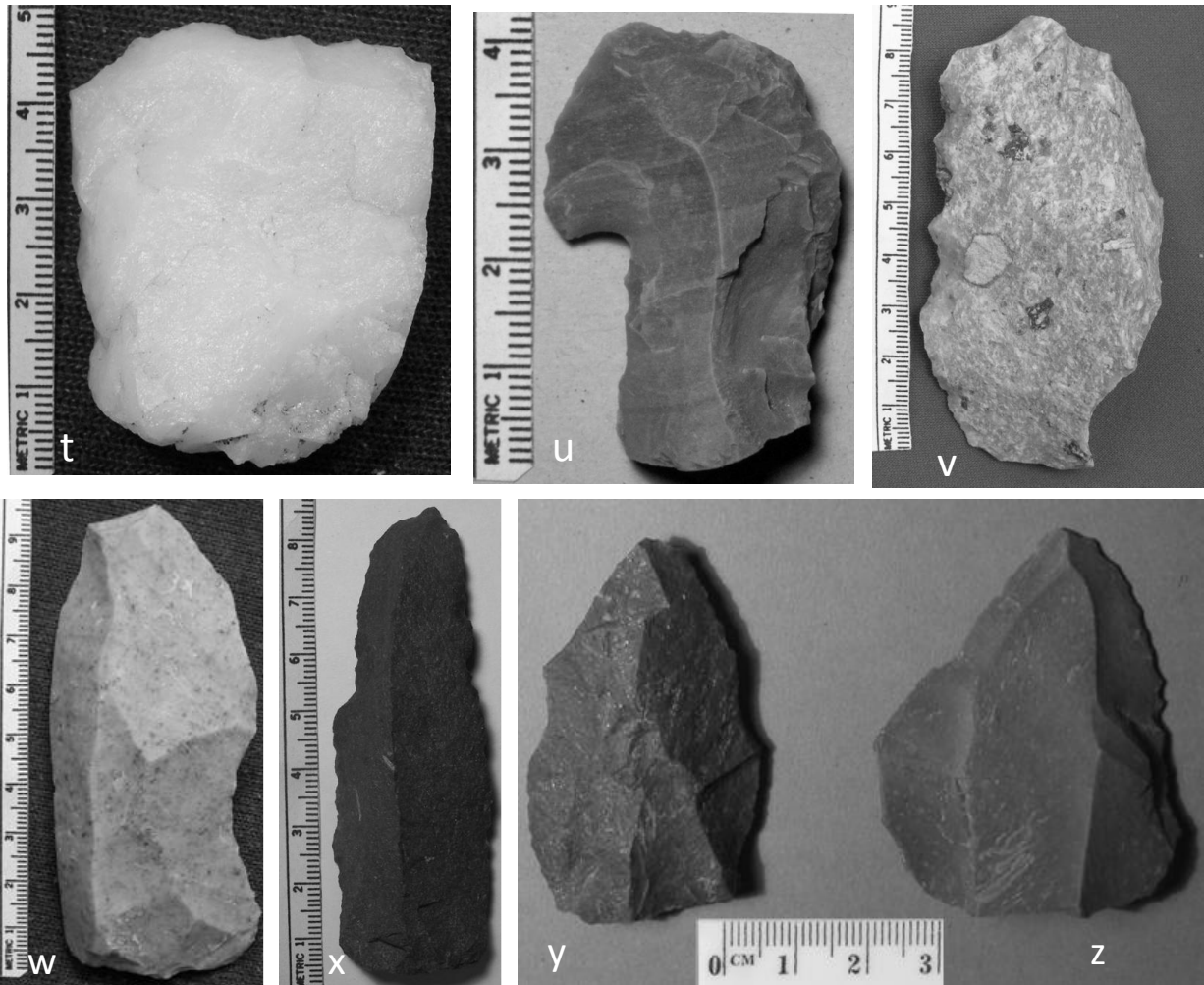


FIGURE 6 CONTINUED. SCRAPER (T), NOTCH (U), DENTICULATE (V). BLANKS: BLADES (W-X), LEVALLOIS (Y-Z).

MSA technological innovations and their geographic distribution has been used by current researchers to track Late Pleistocene hominin movement within and outside of Africa (Armitage et al., 2011; Rose et al., 2011; Beyin, 2013; Crassard and Hilbert, 2013), Figure 8. Their discovery at Asfet may then suggest that the Red Sea basin hosted MSA hominins related to those groups that ended up inhabiting Arabia.

In sum, the Asfet evidence corroborates the plausibility of the African side of the Red Sea as a potential refugium and departure point for hominid dispersals into Eurasia. Assuming that the ancestral source populations for the Arabian MSA makers originated from northeast Africa and dispersed via the Red Sea, as claimed by the investigators of the Arabian sites, it follows that the makers of the Asfet assemblage may have been related to those hominins that brought the NE African technocomplexes into Arabia. Since typical MSA artifacts (i.e., points and prepared core products) are often regarded as characteristic behavioral innovations of *Homo sapiens* in Africa (McBrearty and Brooks, 2000), the makers of the Asfet assemblage may belong to the *Homo sapiens* lineage whose remains have been recovered from securely dated MSA contexts in eastern Africa.

Raw Material	Debitage, Complete Blanks and Fragments										Totals
	Fully Cortical Flakes	Partially Cortical Flakes	Non-cortical Flakes	Levallois Flakes	Levallois Points	Levallois Blades	Prismatic Blades	Proximal Fragments	Other Fragments	Other Flake Types	
Basalt	22	96	124	43	14	24	42	9	74	55	503
Chert		8	6	5	1	4	3	2	2	5	36
Green Schist	2	5	8	3	2	1		2	3		26
Obsidian	2	7	91	41	19	11	18	19	166	35	409
Quartz	2	13	24	10	10	3	3	5	40	4	114
Rhyolite		2	6		1	1	4	3	9	2	28
Shale	3	5	2	5		1	2	1	3	2	24
Other	3	4	3			1			2	1	14
Totals	34	140	264	107	47	46	72	299	41	104	1154
%	3	12	23	9	4	4	6	26	4	9	100

FIGURE 7. ASFET SURFACE MIDDLE STONE AGE RAW MATERIAL VARIABILITY IN THE DÉBITAGE/ FLAKE BLANK CLASS.

Asfet Unit F

In addition to the surface MSA discovery discussed above, six test units were excavated at Asfet (A–F) of which only Unit F produced archaeological remains below surface. The Unit was placed on a flat area on the northern summit of the western ridge (FigureS 5&9). It was initially excavated on a 1x1m area down to 30 cm. Subsequently, a 50 x 100cm sounding pit was added on the southern section and excavation resumed for another 20cm. The unit produced a dense shell assemblage and a modest quantity of lithic artifacts (n = 411). Non-diagnostic complete flakes and fragmentary débitage dominate the lithic sample (Figure 10). A few fully cortical flakes were recovered from the upper layer of the unit indicating some level of initial stage core reduction activity. Obsidian, quartz and basalt account for 59.6, 18.7, and 14.8 percent respectively in the assemblage (Figure 11). While the Unit F lithic assemblage is dominated by non-diagnostic débitage, the presence of a few backed elements hints at LSA tradition. The unit has yielded two radiocarbon dates on mollusk shells, calibrated age range of 5475–5672 Cal BP (Figure 4). So far, the Asfet Unif F represents the first definitive evidence for middle Holocene (sixth millennium BP) human habitation along the Red Sea coast of Eritrea.

A sample of the excavated shell assemblage from Asfet Unit F was subject to lab analysis (Bar-Yosef Mayer and Beyin, 2009). Despite the fragmentary nature of the assemblage, it was possible to discern certain patterns in species composition and ecological conditions associated with human foraging activities along the coast. At the outset, *Terebralia palustris* (Figure 12) is the dominant species in the assemblage accounting for 97% of the total NISP² (n=3018), and 96% of the total MNI³ (n = 616), Figure

² NISP = Number of Identifiable Specimens

³ MNI = Minimum Number of Individuals

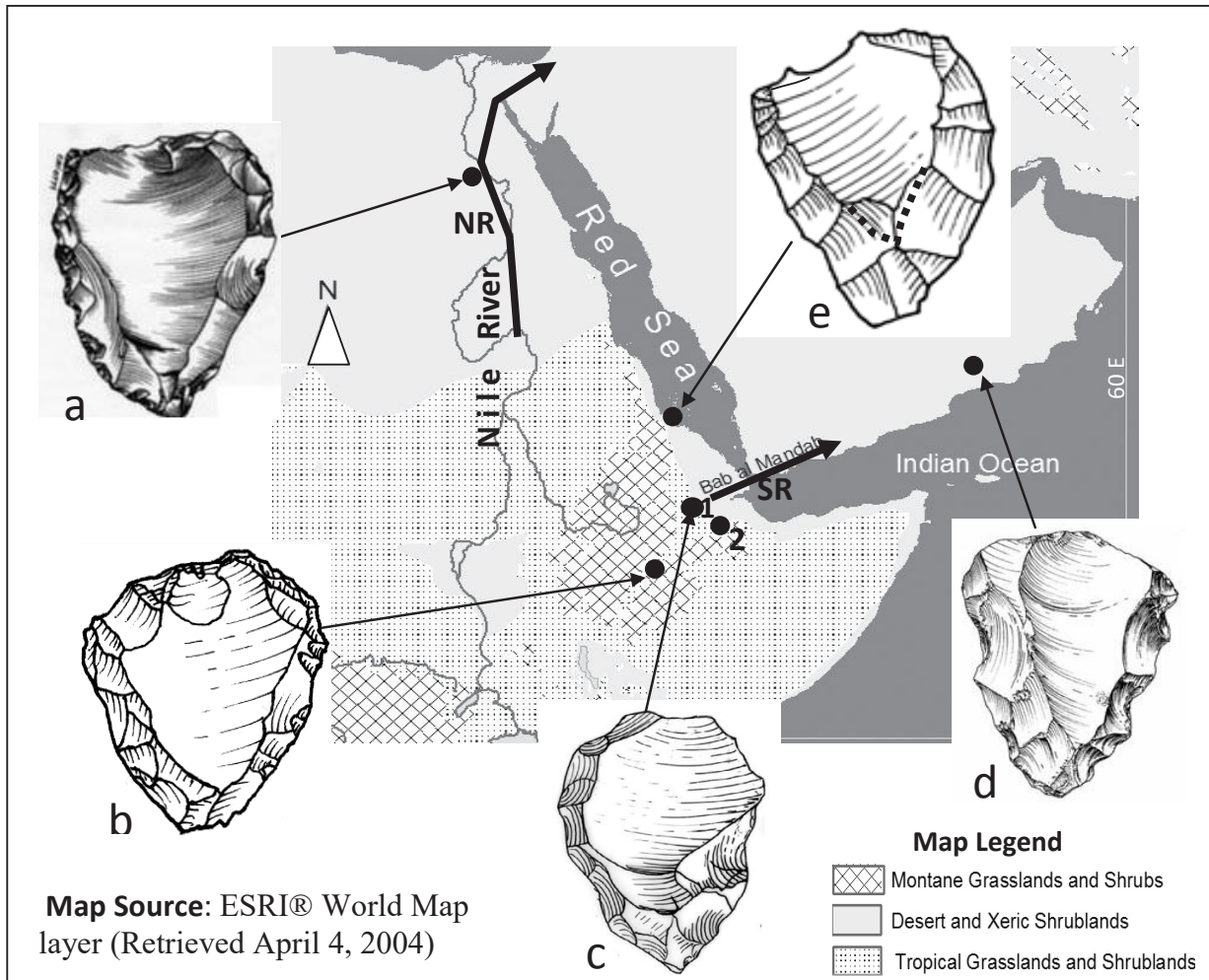


FIGURE 8. MAP SHOWING REPRESENTATIVE NUBIAN TYPE II SITES, AND HORN OF AFRICAN SITES COMPARED WITH ASFET: A = ABYDOS, EGYPT (OLSZEWSKI ET AL., 2005: 290), B = GADEMOTTA, ETHIOPIA (WENDORF AND SCHILD, 1974: 189), C = ADUMA, ETHIOPIA (YELLEN ET AL., 2005: 92), D = AYBUT AL AUWAL, OMAN (ROSE ET AL., 2011: 10), E = ASFET, ERITREA. KEY TO ABBREVIATIONS AND NUMBERS; NR = NORTHERN ROUTE, SR = SOUTHERN ROUTE, 1 = HERTO, 2 = PORC EPIC.

13. This is also the most abundant fauna in the mangrove forests in the nearby shoreline, and could have been easily harvested due to its fairly large size ~90 mm (Bosch et al., 1995). As is the case with most edible mollusks, this species can provide rich dietary supplements including proteins, minerals and a fair amount of calories (Claassen, 1998; Bar-Yosef Mayer and Beyin, 2009). All the mollusk shells discovered at Asfet are common in the Red Sea, and most of them were likely collected for food. One artificially perforated shell on *Chicoreus ramosus* and two *Nerita polita* with naturally abraded apertures were discovered at Asfet signifying that some of the shells were used as beads.

Gelalo NW

Located about 15km from the coastline in the Buri Peninsula, the Gelalo NW study area sits on top of a steep basalt inselberg surrounded by low relief plains now dominated by *Acacia* woodland (Figure 14A). During dry periods, frequent sandstorms could deter human habitation around the low fields. Thus, the ridge top could have offered hunter-gatherers a livable space and a good vantage point to monitor game movement in the surrounding fields. Three radiocarbon dates obtained from mollusk samples placed the settlement of Gelalo site in the range of 7000–8500 years Cal BP (Figure 4). Three

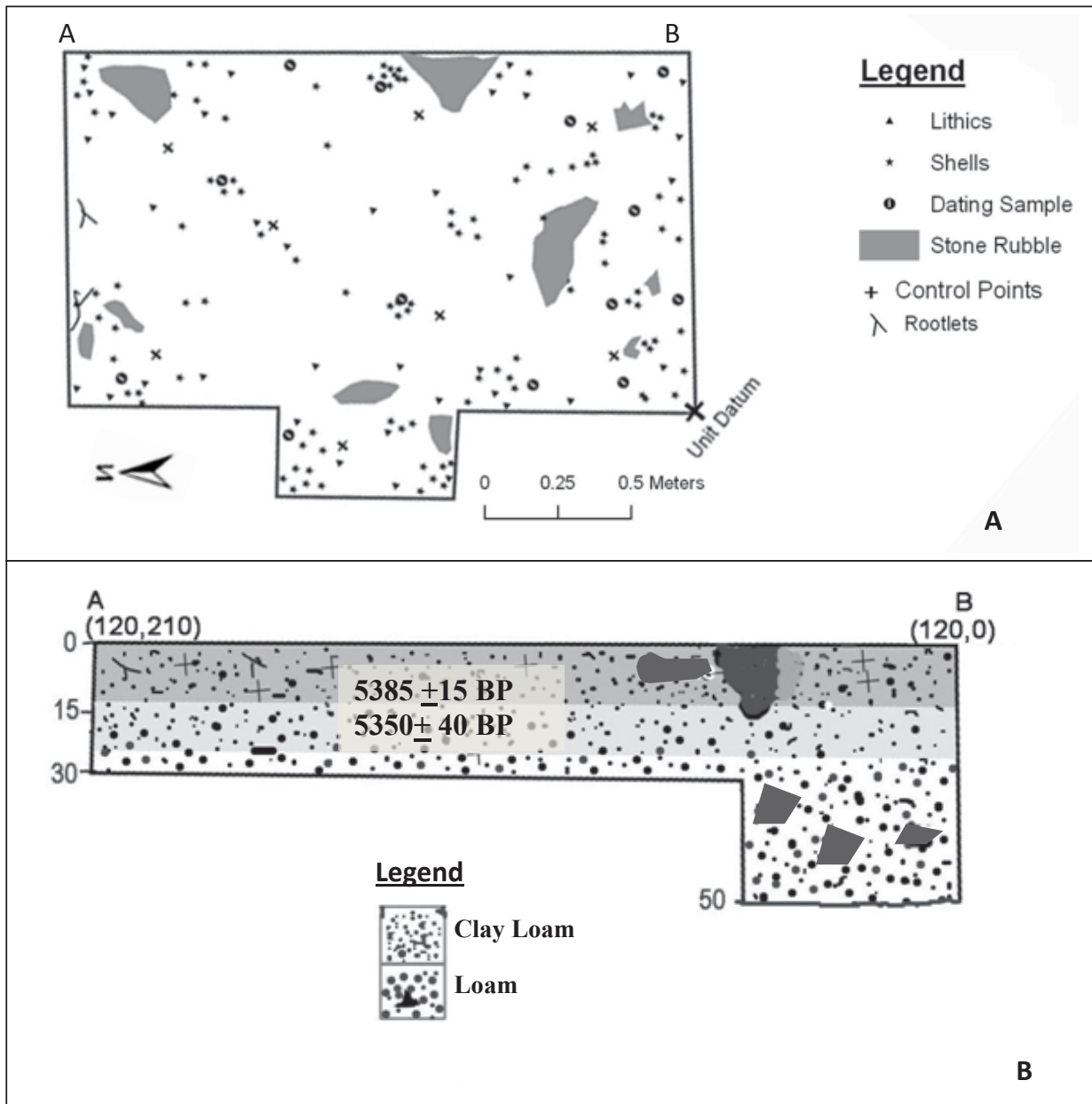


FIGURE 9. ASFET UNIT F PLAN VIEW (A) AND UNIT PROFILE ALONG A-B AXIS (B).

1m² units were excavated to a depth of 50, 40, and 50cm respectively at the site (Figure 14B). The three excavated units produced a total of 4883 lithic artifacts, comprising cores, shaped tools and débitage, all on obsidian (Figure 11). Based on our survey of volcanic raw material sources, obsidian could have been procured from a distance of 10 to 15km. Moreover, over 1000 stone tools were collected from a 2x2m surface collection grid. In all the excavated units, the cultural traces were limited to the upper 25cm of the deposit with artifact densities decreasing sharply with depth. Prismatic core reduction and backed tools (crescentic in shape, also modified from prismatic blades) are the main diagnostic entities (Figure 15), and signify LSA Industry. Circular ostrich eggshell beads were other important cultural artifacts discovered at the site, and may have been used as markers of social or cultural identity (gender, status or ethnicity), Figure 16.

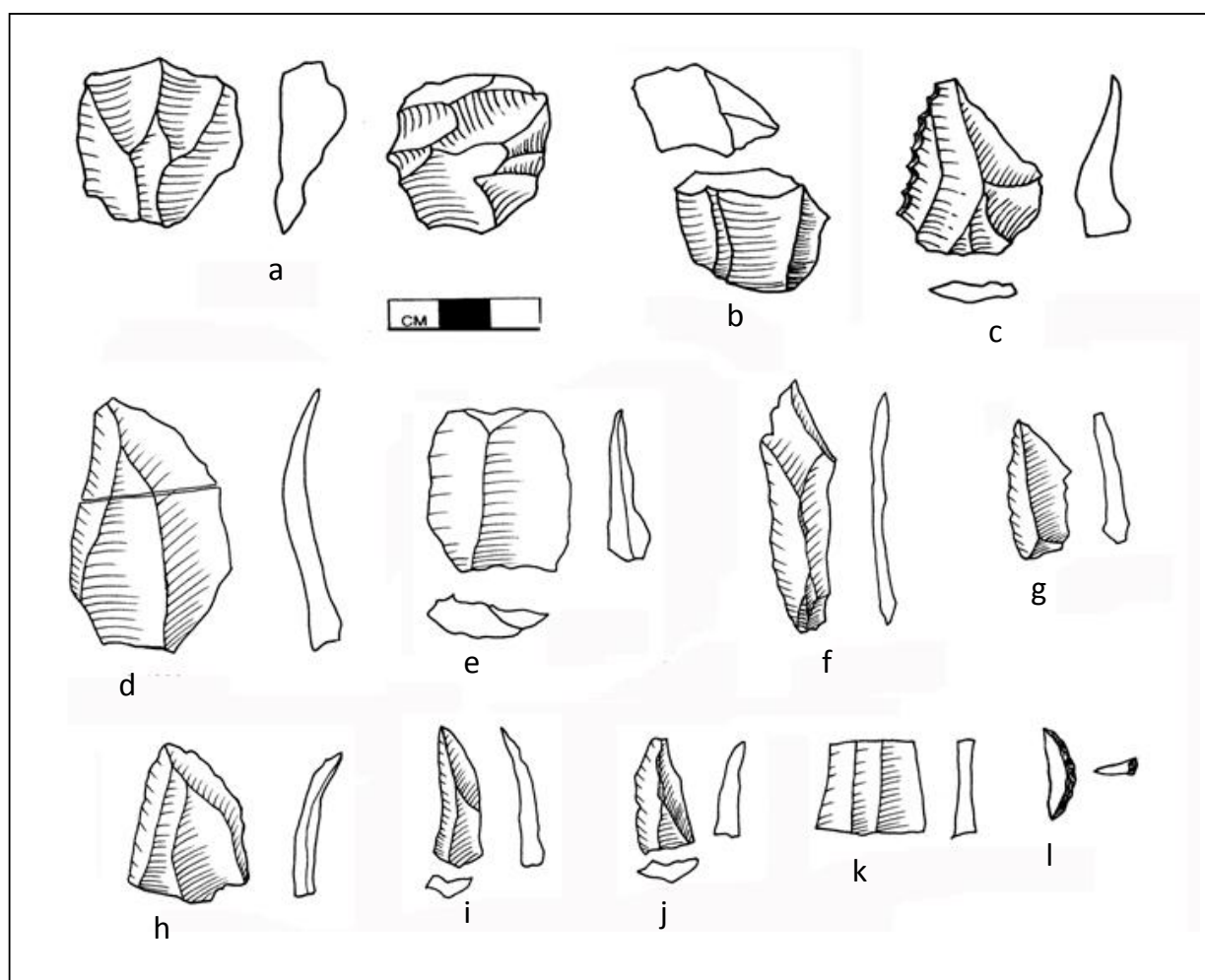


FIGURE 10. ASFET UNIT F REPRESENTATIVE LITHIC ARTIFACTS: BIPOLAR CORE (A), PRISMATIC CORE (B), FLAKE WITH LEFT EDGE MODIFIED BY USE (C), VARIOUS KINDS OF BLANK FLAKES (D-K), BACKED MICROLITH (L). ALL ON OBSIDIAN EXCEPT G.

Site	Tool Type	Raw Material Count (%)				Totals
		Obsidian	Quartz	Basalt	Other	
Asfet	Cores	4 (.97)	3 (.73)	0	1(.24)	8
	Shaped tools	12 (2.9)	0	1(.25)	0	13
	Débitage	245(59.6)	77 (18.7)	61 (14.8)	7(1.7)	390
Gelalo NW	Cores	58 (1.2)	0	0	0	58
	Shaped tools	242(4.9)	0	0	0	242
	Débitage	4583 (93.8)	0	0	0	4583
Misse East	Cores	8 (1.08)	0	0	0	8
	Shaped tools	54 (7.3)	0	0	0	54
	Débitage	677 (91.6)	0	0	0	677

FIGURE 11. RAW MATERIAL VARIABILITY IN THE AFET UNIT F, GELALO AND MISSE LITHIC ASSEMBLAGES.

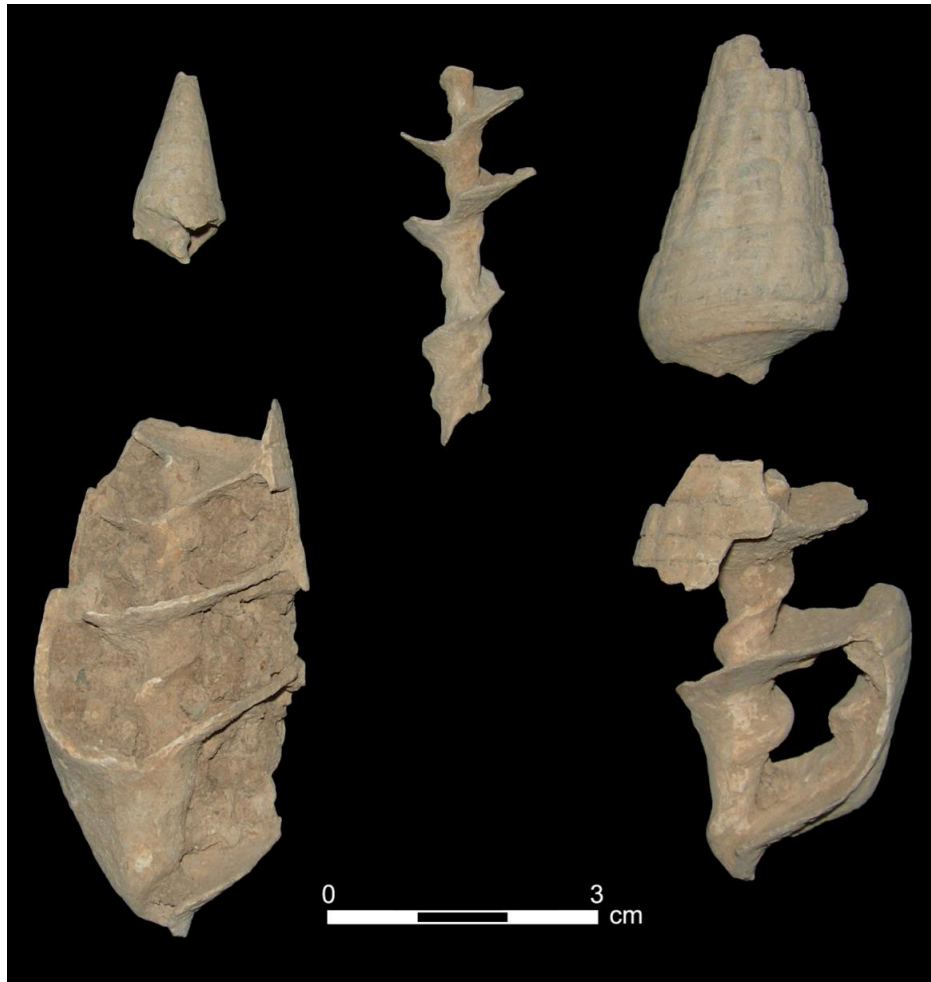


FIGURE 12. TYPICAL *TEREBRALIA PALUSTRIS* BODY PARTS RECOVERED FROM ASFET UNIT F.

Class	Genus/species	Habitat	NISP	MNI
Polyplacophora	<i>Chiton</i>	On or under rocks	1	1
Gastropoda	<i>Nerita</i> spp.	Intertidal on rocks	12	5
	<i>Chicoreus ramosus</i>	Intertidal rocks and coral	9	1
	<i>Tibia insulaechorab</i>	Intertidal on sand	17	3
	<i>Terebralia palustris</i>	Mud among mangroves	3018	616
	Unidentifiable gastropods		3	0
Bivalvia	Ostreidae	Usually attached to rocks	1	1
	<i>Anadara antiquata</i>	Muddy sand, intertidal and off-shore	22	4
	<i>Barbatia decussata</i>	Under rocks, upper shore	34	9
	Cardiidae	variable	3	1
	Unidentifiable bivalves		3	0
unknown	Shell disc bead		1	1
	Total		3124	642

FIGURE 13. COMPOSITION OF THE ANALYZED SHELL ASSEMBLAGE FROM ASFET UNIT F (AFTER BAR-YOSEF MAYER AND BEYIN, 2009: 116).

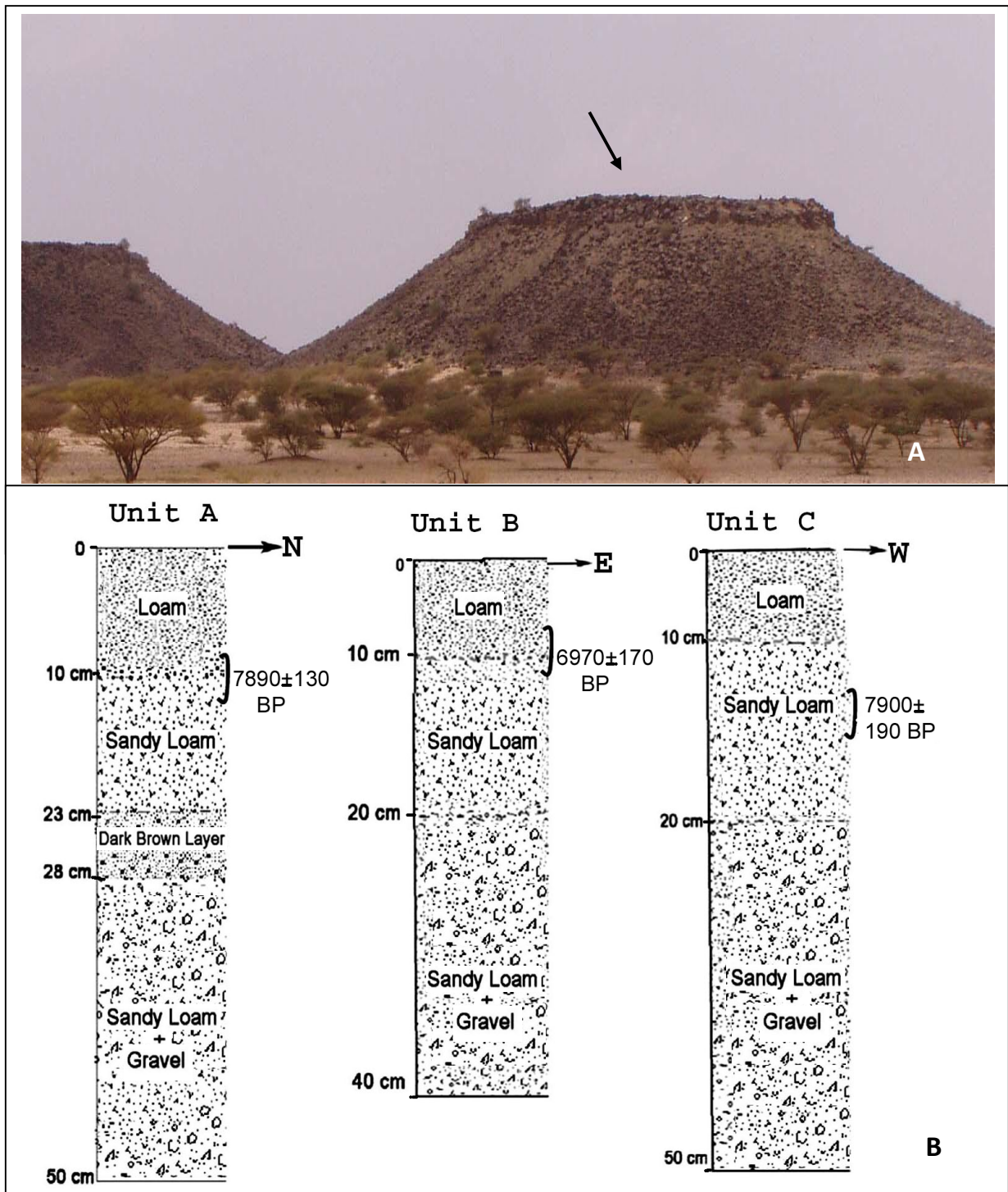


FIGURE 14. LOCATION OF THE GELALO NW SITE, SOUTH VIEW (A) AND PROFILES OF THE EXCAVATED UNITS (B).

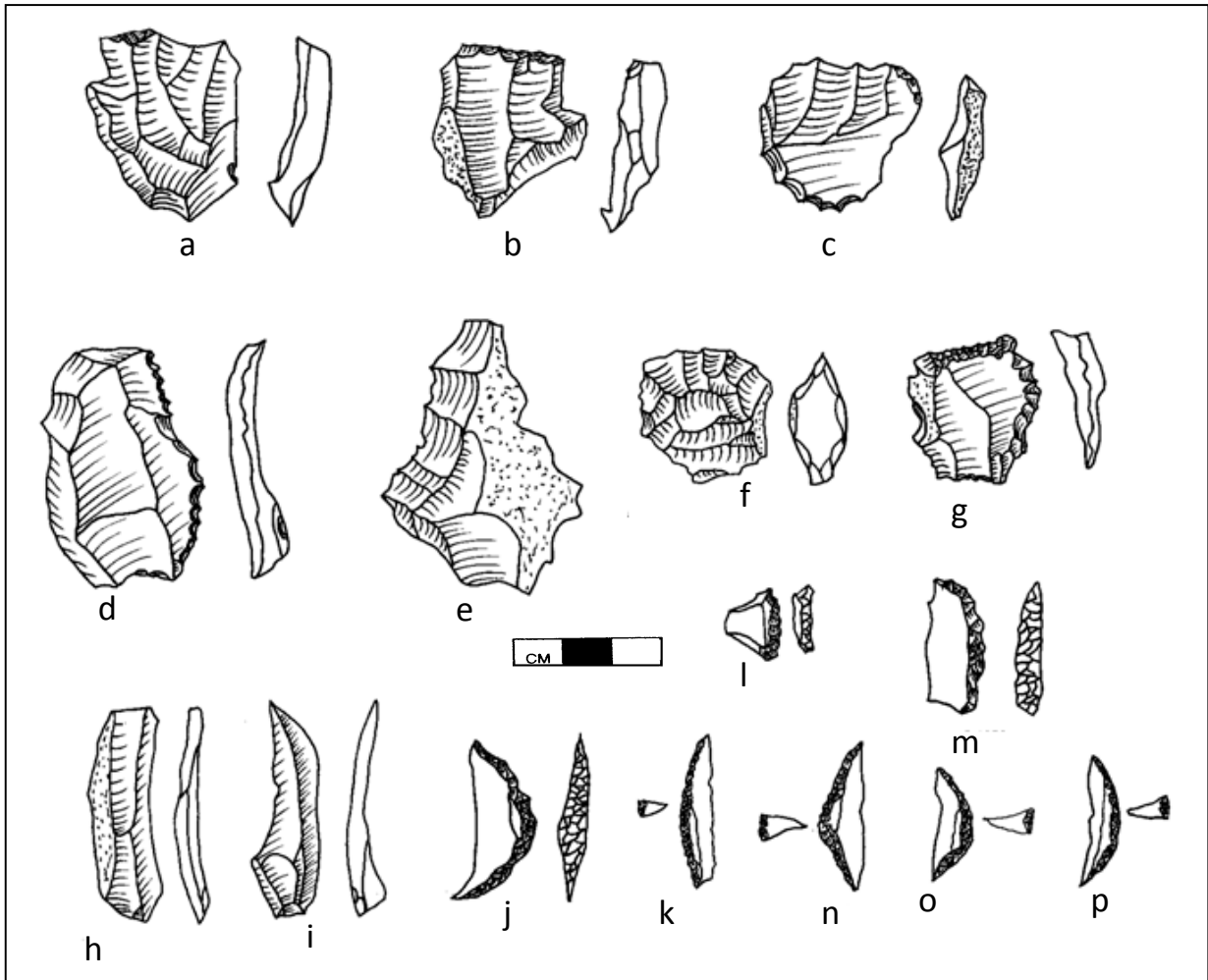


FIGURE 15. REPRESENTATIVE LITHIC ARTIFACTS FROM GELALO NW: CORES (A-C), BLADES (H-I), SCRAPERS (F,G, L), BACKED MICROLITHS (J,K,M,N,O,P).



A small shell assemblage was recovered from the site, represented by a high frequency of *Terebralia palustris*, and constituting 297 NISP and 17 MNIs (Bar-Yosef Mayer and Beyin, 2009), Figure 17. While it was not possible to make definitive assessment regarding the importance of shellfish to human subsistence due to the limited size and fragmentary nature of the assemblage, the occurrence of shells on a hill-top, at such a distant location from the seashore signifies that coastal resources were brought to the interior landscapes by specialized groups who intermittently visited the coast on special trips. Terrestrial faunal remains were not

FIGURE 16. BEADS FROM GELALO SITE: A) OSTRICH EGGSHELL, B) *ENGINA MENDICARIA* SHELLS (THE THREE SPECIMENS ON LEFT) AND *VOLVARINA MONILIS* (THE SPECIMEN ON RIGHT).

Class	Genus/species	Habitat	NISP	MNI
Polyplacophora	<i>Chiton</i>	On or under rocks	1	1
Gastropoda	<i>Nerita sanguinolenta</i>	Intertidal on rocks	1	1
	<i>Terebralia palustris</i>	Mud among mangroves	188	8
	<i>Engina mendicaria</i>		3	3
	<i>Volvarina monilis</i>		1	1
Bivalvia	<i>Barbatia decussata</i>	Under rocks, upper shore	1	1
	<i>Atactodea striata</i>	Intertidal in sand	1	1
	Unidentifiable bivalve		1	1
Unknown	Shell disc bead		3	3
	Total		200	20

FIGURE 17. COMPOSITION OF THE ANALYZED SHELL ASSEMBLAGE FROM GELALO NW (AFTER BAR-YOSEF MAYER AND BEYIN, 2009:120).

recovered at the site, presumably due to preservation and/or excavation biases, but the location of the site farther inland suggests that it was primarily selected for terrestrial resource exploitation. The discovery of abundant lithic artifacts (with microlithic component) suggests human hunting and other activities as very few stone tools are necessary for mollusk exploitation. Ethnographic studies show that coastal foragers rarely travel more than 5-10km daily (Bigalke, 1973). Thus, the fact that Gelalo lies about 15km inland suggests that, the coastline may not have been much farther than its present location. The exploitation of shells at Gelalo may reflect periods of terrestrial resource deterioration that forced people to harvest low rank resources from the coast.

Misse East

The Misse study area lies about 4km inland from the present coastline on the Gulf of Zula side of the Buri Peninsula. It is situated on top of a level section limestone ridge overlooking the Misse River that flows into the Gulf of Zula (Figure 18A). Like the other sites discussed above, the site was subjected to surface and subsurface investigations, but only one 1x1m unit was excavated here (Figure 18b). The site preserves a shallow deposit, but artifact density was much greater per the same excavated space at the other sites, especially mollusk shells. The excavated unit produced a modest quantity of lithic artifacts (n =739) and the majority of the artifacts and shells were collected from the upper 10cm deposit. Obsidian was the sole raw material for making the Asfet lithic artifacts (Figure 11). Cores, shaped tools and débitage make up 1, 7.3, and 91.6 percent respectively (Figure 11). The Misse débitage blanks are relatively longer in size than the Gelalo and Misse samples. As is the case with the Gelalo assemblage, blades and backed tools constitute the most diagnostic entities in the Misse assemblage (Figure 19). A *chaîne opératoire* assessment of the assemblage reveals that longer blades (more 30mm) were preferred for making backed tools.

The Misse shell assemblage is characterized by the predominance of one particular species, *Atactodea striata*, which accounts for 94% of the MNI (n=133), and 83% of the total NISP (n=267), Figures 20-21. With the exception of *Atactodea striata*, most of the other species represented in the Misse assemblage were also encountered at Asfet. However, the dominance of this species changes the character of the midden. *Atactodea* is a small bivalve that buries itself in sandy intertidal beaches. It could have been

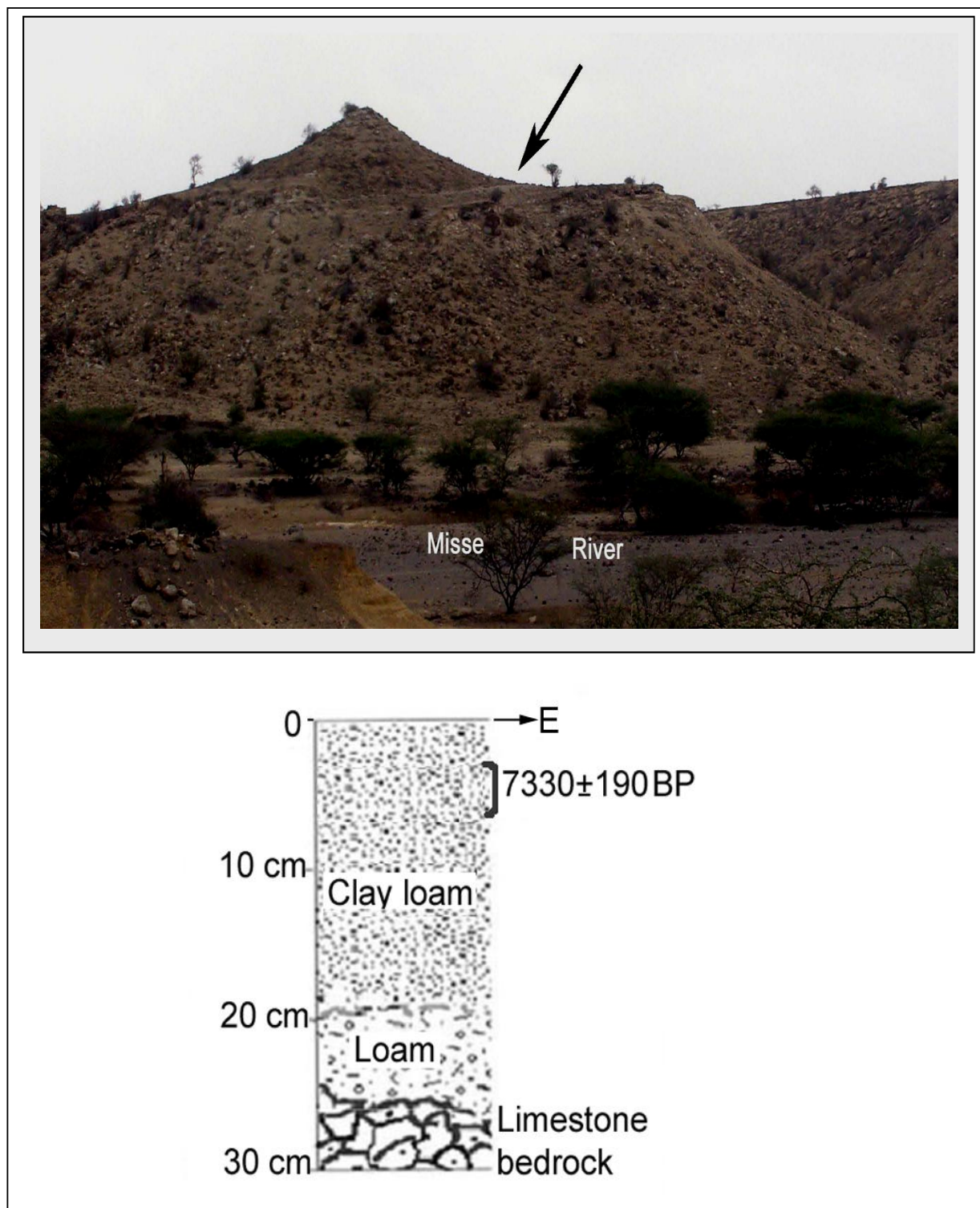


FIGURE 18. LOCATION OF THE MISSE EAST SITE, SOUTH VIEW (A), AND PROFILE OF THE EXCAVATED UNIT (B).

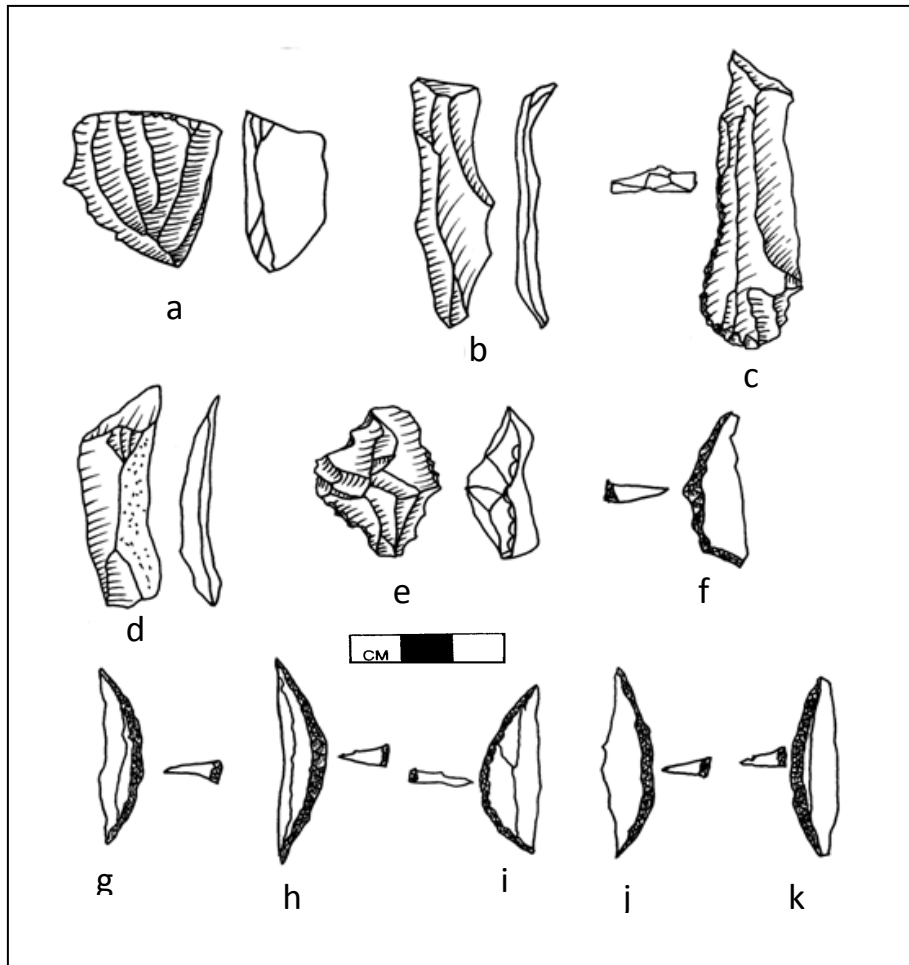


FIGURE 19. EXCAVATED LITHIC ARTIFACTS FROM MISSE EAST: CORES (A,E), A = PRISMATIC CORE; BLADES (B-D), BACKED MICROLITHS (F-K).

easily collected from the nearby coast during low tide. The predominance of a single species of *A. striata* at Misse hints at selective harvesting of shellfish from the coast. Two shell samples gave the site a calibrated age range of 7323-8039 BP (Figure 4), confirming the presence of an early Holocene (eighth millennium BP) human settlement on the eastern coast of the Gulf of Zula, contemporaneous to Gelalo NW. The presence of contemporaneous sites at different locations with respect to the coastline implies that humans exploited diverse landscapes on episodic or seasonal bases.

Implications of the Archaeological evidence from the Eritrean Red Sea Coast

From the evidence so far available from the Eritrean coastal area, it appears that the western littoral zone of the Red Sea basin (to which the Buri-Zula plains are a part) had hosted at least intermittent early human occupations. The sites fall into two broad occupation episodes: a) Abdur and the Asfet surface assemblage representing MSA occupations, b) Gelalo, Misse and Asfet Unit F representing LSA occupations. Besides the four sites considered here, several other sites representing LSA and MSA lithic evidence were recorded around the Buri Lake and along the southern peripheries of the Zula Gulf (Beyin and Shea, 2007). The Eritrean coast lies in a strategic location adjacent to the presumed dispersal routes of early humans from eastern Africa into Arabia and the Levant. The position of the Buri-Zula region at the confluence of the Red Sea shorelines and the Danakil depression (a northern extension of the East African Rift Valley) makes it particularly important in the context of ongoing debates about



FIGURE 20. *ATACTODEA STRIATA* SHELLS (A), AND OSTRICH EGGSHELL BEADS (B) FROM THE MISSE EAST SITE.

the geographic routes and ecological backgrounds of early human dispersal out of Africa. In this regard, the Abdur and Asfet MSA sites, by virtue of their older age, can be regarded as representatives of early human adaptation along the Red Sea coastal margins prior to their dispersal out of Africa. Assuming that hominins were following major water courses during their expansion out of eastern Africa, the Zula and Buri plains would have been regularly inhabited by hunter-gatherer groups dispersing from the hinterlands of eastern Africa following riverine tributaries along the Ethiopian rift and Danakil depression.

There are various incentives for hunter-gatherers to disperse to the Buri-Zula plains. The low plains of the Buri-Zula landscapes dotted by volcanic inselbergs are ideal for terrestrial grazers. At present, the area hosts a wide-range of such animals (e.g., Soemmerring's and Dorcas gazelles, dik-dik and one of the last free-ranging species of African wild ass, *Equus africanus*). If hunting terrestrial game were to become precarious for any reason, aquatic resources and shellfish would always have been accessible on the

intertidal zones. Furthermore, shellfish as a supplementary food source could have also been a matter of choice (e.g., Erlandson, 2010). The recovery of diverse mollusks at the younger Holocene settlements (Bar-Yosef Mayer and Beyin, 2009) indicates that the shorelines of the Zula gulf would have offered prehistoric foragers a range of shellfish options that could have been harvested at different seasons.

Although we are not certain where the sea level might have been during human occupation episodes of the Asfet and Abdur sites, in all likelihood, the climatic condition may not have been much different than today. At least when it comes to Abdur, the general consensus is that human settlement there occurred during an interglacial period or high sea level stand (Walter et al., 2000). It is also likely the case that Asfet was inhabited during an interglacial episode. If, in fact, the sites were occupied

Class	Genus/species	Habitat	NISP	MNI
Polyplacophora	<i>Chiton</i>	On or under rocks	2	1
Gastropoda	<i>Nerita</i> sp.	Intertidal on rocks	8	3
	Unidentifiable gastropods		10	0
Bivalvia	Ostreidae	Usually attached to rocks	21	1
	<i>Anadara antiquata</i>	Muddy sand, intertidal and off-shore	3	1
	<i>Barbatia decussata</i>	Under rocks, upper shore	10	1
	Cardiidae	variable	1	1
	<i>Atactodea striata</i>	Intertidal in sand	267	133
Unknown	Shell disc bead		1	1
	Total		323	142

FIGURE 21. COMPOSITION OF THE ANALYZED SHELL ASSEMBLAGE FROM MISSE EAST (BAR-YOSEF MAYER AND BEYIN, 2009:119).

during low sea level (glacial) event, most human settlements during this time would have been located several kilometers eastward from the present shoreline, where according to the COM discussed above, the presumed green oases belts were situated. Based on a rough estimate derived from the Red Sea bathymetric map (Bailey, 2009; Lambeck et al., 2011), at its lowest point (corresponding to major glacial maxima of the Pleistocene), the shorelines around the Buri-Zula plains would have retreated ~140km eastward. During this time, the Buri-Zula area would have turned to desolate landscape, devoid of human settlement because there is no major drainage around the area that could have served as a source of freshwater for hominins and terrestrial fauna.

Granted any dispersal via the Bab al Mandab was preceded by prolonged adaptation to the African side of the Red Sea, especially on the southern end of the basin, the Asfet and Abdur sites might represent part of a widespread coastal adaptation by African hominins along the western margins of the Red Sea prior to their dispersal to neighboring Eurasian landmasses.

Later Pleistocene foragers successfully adapted to the Buri-Zula plains may have continued moving southward along the Danakil-Djiboutian coast, afterwards entering Southern Arabia via the Strait of Bab al Mandab (Figure 22). Likewise, there does not appear to be any conceivable obstacle for the Asfet hominins to disperse northward up to the Levant along the Sudanese-Egyptian Red Sea coastal littorals. The evidence in and of itself can serve as a plausible baseline to launching Paleolithic survey along the Sudanese and Egyptian coastlines.

Outside of the Eritrea coastline, Holocene sites with microlithic component are scarce on other parts of the western Red Sea coastal peripheries. From the Arabian side, sites of comparable age (dating between the eighth and sixth millennia BP) have been recorded from the Tihamah region of southwestern Yemen and from the Farasan Islands, off the western coast of Saudi Arabia (Tosi, 1986; Bailey et al., 2007). *Terebralia palustris*, the dominant species in the Asfet and Gelalo assemblages characterizes the Tihamah sites. Moreover, several of the middle Holocene sites in the Tihamah region of Yemen produced stone tools made on obsidian raw material, the sources of which were identified on the Eritrean coastal areas (Khalidi, 2009). Some of the Eritrean sources with which the Yemeni sites showed close affinity include Irafailo, Dahlak Islands and Alid Vocano. While the nature of cultural interaction between the two sides of the Red Sea remains unclear, the obsidian data hints that the prehistoric inhabitants of the Tihamah and the Buri-Zula sites may have been sharing the same obsidian sources located on the Eritrean side. Other commodities besides obsidian may also have been exchanged between the two regions. All evidence considered, the Holocene settlements along the Eritrean coast seem to represent a broader regional phenomenon of human exploitation of coastal landscapes with the possibility of direct human interaction across the Red Sea basin.

Conclusions

The Eritrean coastal region holds a crucial position as a plausible destination for Late Pleistocene and Holocene foraging groups dispersing from the hinterlands of Africa, some of which may have served as source populations for later dispersals into Eurasia (Figure 21). Given the paucity of Paleolithic record from the western side of the Red Sea basin, the discovery of MSA and LSA assemblages along the Eritrean coast provides a much needed reference data to assess the role of the Red Sea coast as a potential refugium and dispersal corridor for early humans. Even though there are only a few known coastal sites from the African side of the Red Sea, it is likely the case that the coastal territories of Eritrea, Djibouti, Somalia, Sudan and Egypt were continuously visited by prehistoric foragers. The discovery of several sites in the Buri-Zula region suggests that other sites (with important implications for early human dispersals history) may yet be discovered along the African side of the Red Sea basin. Future systematic research should target limestone reef deposits and near-coastal ecotonal plains along the western side of the basin.

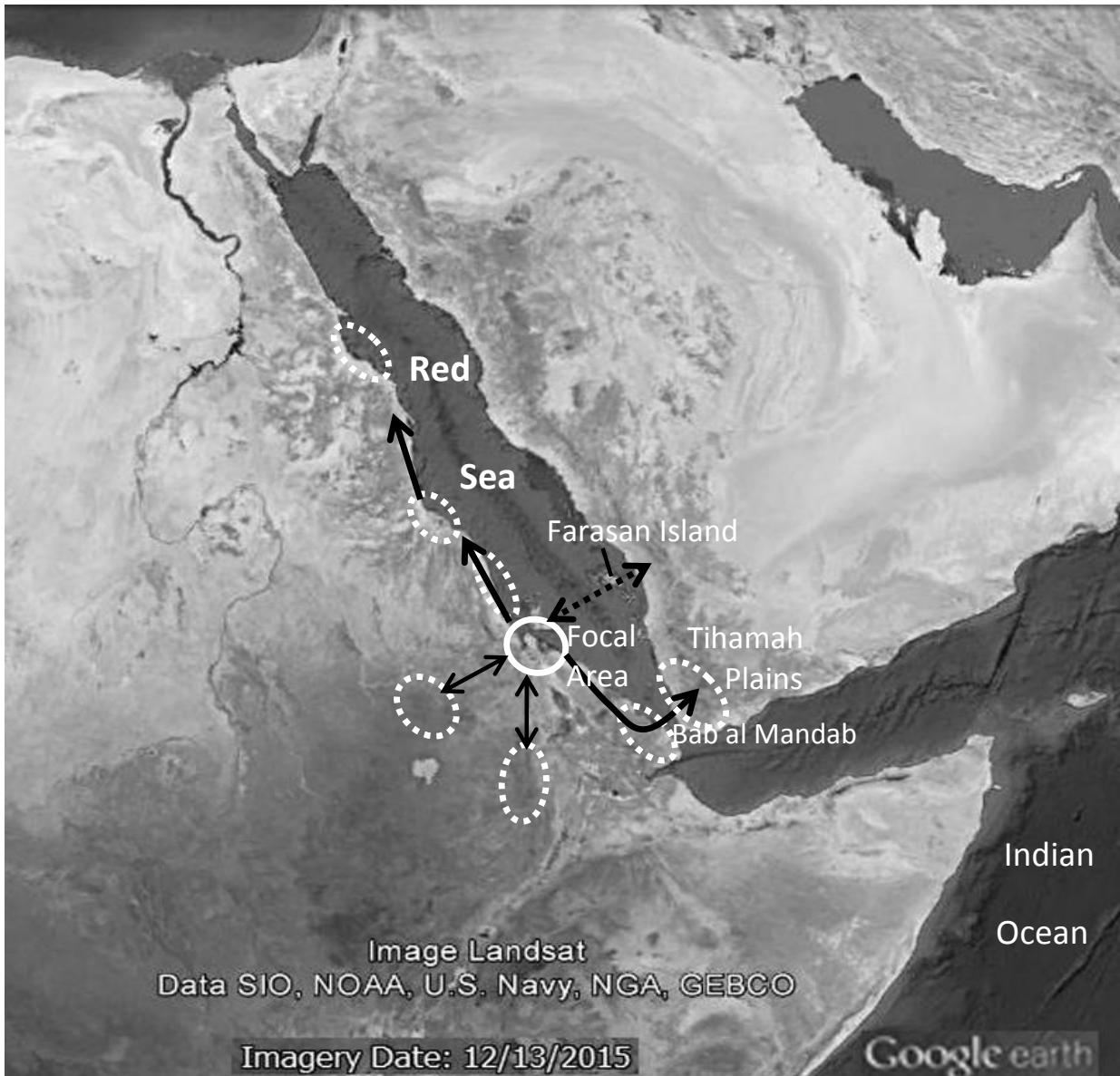


FIGURE 22. HYPOTHETICAL CULTURAL AND DEMOGRAPHIC CONNECTIONS BETWEEN THE SETTLEMENTS DISCUSSED IN THIS PAPER AND SETTLEMENTS THAT COULD HAVE POTENTIALLY OCCURRED IN THE NEIGHBORING REGIONS. SOLID ARROWS = POSSIBLE PATHS OF INTERACTIONS, DASHED ARROW = PATH OF INTERACTION THAT MAY HAVE EXISTED DURING LOW SEA LEVEL, DASHED CIRCLES = REGIONS WHERE PREHISTORIC SETTLEMENTS ARE PREDICTED/RECORDED.

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Interdisciplinary Approaches to Stratifying the Peopling of Madagascar

Roger Blench

McDonald Institute for Archaeological Research, University of Cambridge
8, Guest Road, Cambridge CB1 2AL, United Kingdom
E-mail: rogerblench@yahoo.co.uk

Abstract

It has long been accepted that the core population contributing to the Malagasy language are the Barito, an inland people of SE Kalimantan, and that a superstrate of Malay nautical terms implies ships under Malay control. However, recent linguistic and genetic research points to a far more complex picture. Malagasy has numerous terms not attested in Borneo languages and only found on other islands in SE Asia, particularly Sulawesi. Genetic research, comparing populations of Island SE Asia with the Malagasy, indicates complex layering, and surprisingly, no strong Barito component.

There are several possible models to explain this anomalous situation, for example that the original vessels which brought the settlers across the Indian Ocean had multi-lingual crews. However, this does not explain why the Barito, a non-maritime people, came to contribute to the core Malagasy culture. A more intriguing alternative is that Madagascar was peopled in waves coming from Island SE Asia, and that a significant component consisted of the ancestors of the present-day Samalic and Orang Laut peoples, the 'sea nomads', whose opportunistic trading and multi-lingual culture would better explain the mixture found in Madagascar today. In addition, the evidence from ceramics indicates that the Comores may have played a key role as a staging post in these migrations.

The present Malagasy language is strikingly uniform, which suggests a significant episode of language levelling, presumably in the medieval period, and related to the establishment of the Merina kingdoms on the plateau. However, Malagasy dialects can provide clues to a more complex history of migration, especially among populations such as the Vezo, who practice a form of nomadic marine exploitation similar to the Samal of SE Asia.

Keywords: Sulawesi; Philippines; migration; Madagascar; lexicon

Acronyms

ABVD	Austronesian Basic Vocabulary Database
ACD	Austronesian Comparative Dictionary
AD	Anno Domini
BC	Before Christ
BP	Before present
ISEA	Island Southeast Asia
PAN	Proto-Austronesian
PMP	proto-Malayo-Polynesian
POC	proto-Oceanic
WPMP	Western Malayo-Polynesian



Introduction

Unlike the remainder of Sub-Saharan Africa, the dominant language of Madagascar is Malagasy, an Austronesian language related to those spoken in Island SE Asia. How this came to be has been the subject of debate for several centuries. Clearly this must reflect a migration of peoples and should be reflected in the archaeological record. Yet such a link has so far proved elusive. Similarly, Islands SE Asia is a large and diverse place, so a more precise analysis of the likely origin(s) of the Malagasy language is essential to the correlation with archaeology and the reconstruction of prehistory. This paper¹ explores the implications of recent findings that Malagasy is multiphyletic, that its vocabulary and culture originate in several places and we must therefore seek evidence for multiple migrations.

Since the 17th century it has been accepted that Malagasy is an Austronesian language. Dahl (1951) argued that its nearest relative within Austronesian was Ma'anyan, one of the Barito languages of SE Borneo. However, as we know more about both Malagasy and Bornean languages, it has become increasingly clear that the story is more complex. Robert Blust (Austronesian Comparative Dictionary)² points out that some Malagasy forms are Austronesian but not found in Borneo languages. Beaujard (1998, 2003) identifies a number of roots occurring in Sulawesi languages which are not attested in general Austronesian but which are reconstructed by Mills (1977), pointing to a specific Sulawesi component in Malagasy. Less clear is a Philippines component; Malagasy has a few words which appear to be borrowed from Philippines languages. These may be the result of Iberian trans-Indian Ocean traffic, post 16th century. Sander Adelaar (1994) observed some time ago that the names of winds and other terms relating to seafaring are direct borrowings from Malay. This superstrate of Malay nautical terms implies ships under Malay control. Blench (2008) analysed the borrowing of natural world terms (especially animal names) from coastal Bantu. All of this argues for a complex layering of migrations to Madagascar, rather than a single founder population, something which is reflected in human genetics. The Malay nautical vocabulary points strongly to Malay-owned ships, presumably seeking trade, as well as raiding for slaves. However, the settlement of Madagascar implies colonisation, and Blench (2010) argues that the ship-owners were driven from the East African coast to Madagascar and thence to the cooler highlands by high mortality from disease, especially malaria. If so, the contribution of the Barito, a non-maritime people, to the core of Malagasy language and culture becomes even more surprising. The Barito, as far as we know, were inland peoples with no maritime capacity, and certainly without the skills to navigate the Indian Ocean, so either the Barito were themselves slaves or hired crew.

Extended lexical analysis suggests that Madagascar was peopled in waves coming from different islands in SE Asia, and that a significant component consisted of the precursors of the present-day Samalic and Orang Laut peoples, the 'sea nomads', whose opportunistic trading and multi-lingual culture would better explain the different elements found in Madagascar today. This in turn is susceptible to two different explanations;

1. the boat crews were multi-lingual;
2. or the populations which settled Madagascar came in distinct waves, from different source islands, each bringing their own cultural package

Or possibly, both may have occurred. If the Malay ships pioneered the route, other enterprising maritime populations could have followed in their wake. Two linked articles by Philippe Beaujard (2003) suggest waves of colonisation, although this model has been criticised by Sander Adelaar. It is not clear whether

¹ The first version of this paper was presented at the Indian Ocean Conference, Madison, Wisconsin, 23-24th October, 2015. I would like to thank the organisers for the invitation to attend and for finding funding to make this possible. Thanks to Mark Horton for advice on the ceramics and to Henry Wright for review comments.

² <http://www.trussel2.com/acd/> Last accessed 12/5/18

these alternatives could be resolved purely from the linguistic evidence and we will need archaeology linking ISEA with Madagascar to clarify the issue. What can be done in the meantime, however, is to establish more clearly exactly what the linguistic and cultural evidence is telling us.

One pathway to resolving these issues is to explore layering in Malagasy vocabulary in more detail. The literature is replete with possible suggestions of connections. By comparing the proposals with large online databases, it is possible to establish their credibility. The core of this paper is thus an examination of the origin of lexemes from islands or regions other than Borneo, more specifically Sulawesi and the Philippines. However, it also considers more briefly the non-linguistic evidence, in particular the distribution of the tube-zither, and recent findings from human genetics. An additional hypothesis in the literature is the identification of the Vezo people of SW Madagascar with the Bajaw, implying a distinct migration. While this is attractive in terms of the similarity in lifestyles, linguistic support is limited. The broad conclusion is that the layers of vocabulary in Malagasy do originate from different islands and that multiple waves of ships is a better fit with the data than multi-lingual crews. In addition, the evidence from ceramics indicates that the Comores may have played a key role as a staging post in these migrations.

Models for the settlement of Madagascar

The settlement of Madagascar remains problematic, for lack of archaeological sites which clearly point to Austronesian heritage. Indirect evidence points to prior Palaeolithic settlement of Madagascar from the mainland and presumably by 400 BC (Blench 2007; Virah-Sawmy et al. 2010). There have been several claims of significantly earlier settlement (Gommery et al. 2011; Dewar et al. 2013) but the dating of these is uncertain and they are not associated with vegetation change and megafaunal extinction. Unfortunate publications such as Douglass & Zinke (2015) develop models which promote the shakiest archaeological evidence to solid projections onto the past. Nonetheless, the palaeo-environmental evidence points strongly to a forager presence prior to the Austronesians and some of the resident populations still surviving as marginal hunter-gatherers, the Beosi and Mikea. Even so, genetics shows that some foraging groups are identical to their farming neighbours (Pierron et al. 2014). Ptolemy clearly knows about Madagascar by earlier than 400 AD, and Graeco-Roman ships must therefore have been trading with somebody.

Although the earliest Neolithic sites are around 6th century AD, the dating is far from secure (Dewar & Richard 2012) and we might be better to assume 7th century. The earliest pottery is called Ampasimahavelona (AMV) phase and C14 dates provide a range from the 7th century CE to around the 10th century from the type site but also from Sandrakatsy and Nosy Mangabe. The pottery is undifferentiated brownware and does not clearly point to any particular source either in ISEA or East Africa (Mark Horton pers. comm.).

The first decorated ceramics appear at Mahilaka and are probably post 10th century (Radimilahy 1998). These have wavy lines and dentate decoration, similar to those from the Comores sites at corresponding dates and are often called Dembeni phase pottery (Wright et al. 1984). These traits might derive from ISEA but there are no certain comparisons, which may indicate indirect settlement from the Austronesian region. Blench (2010) argued that the first Austronesian settlements were on the coast and that (perhaps) malaria drove the settlers to Madagascar, transporting African serfs/slaves. But the Comores may well be implicated in this complex evolution, as indeed the genetics suggests (Msaidie et al. 2011). Crowther et al. (2016) present an up-to-date review of the archaeobotany of cultivated plants in the region which broadly suggests that typically Asian crops such as mung bean and Asian rice dominate the Comores and Northern Madagascar assemblages while those of African origin are preponderant on the inshore islands. Unfortunately none of these are represented in the linguistic evidence presented in this paper.

If the mainland and the Comores were indeed staging posts, then SE Asian mariners interacted with coastal populations before moving on to Madagascar. The peoples on the East African coast most likely were both Bantu agriculturalists and Cushitic-speaking pastoralists. There are two consequences of this in terms of ceramics. If the Barito component did not include potters, they would have to learn this skill from the Bantu on the mainland, and possibly the confrontational relations between residents and invaders did not create a matrix for the unbroken transmission of styles. The Austronesian traditions of ceramics would have been lost and the new settlers on Madagascar would have poorly developed skills as potters. Hence the undifferentiated brownware which has so far been recorded. The challenge is thus to integrate the findings from different disciplines into a comprehensive synthesis of the pattern of interaction between ISEA and the East African coast (Blench 1994).

Linguistic evidence

Overview

The present Malagasy language is strikingly uniform, far more than would be expected following settlement 1500 years ago. This suggests a significant episode of language levelling, presumably in the medieval period, and related to the establishment of the Merina kingdoms on the plateau (cf. Blench 2014a). However, Malagasy dialects can provide clues to a more complex history of migration, especially among populations such as the Vezo, who practice a form of nomadic marine exploitation similar to the Samal of SE Asia (Sanders 2005). The evidence for connections with Manyaa, Malay and Javanese has been laid out in various sources, and will not be repeated here. The most interesting connections are with the island of Sulawesi. The main body of languages on Sulawesi are the Celebic subgroup of Austronesian and include the Toraja and numerous settlements of the Bugis (Mills 1975, 1977). The Celebic languages have a number of lexical innovations, distinct from Proto-Austronesian (PAN), as well as showing striking phonological changes. Malagasy has some specific isoglosses with these Celebic forms as well as a few with the languages of the Philippines. In the case of the Philippines, there is the possibility that similarities are late borrowings, following the Spanish conquest of the islands and the link to the trade routes leading to Sofala and the interior of Mozambique.

In order to establish the status of individual lexical items they need to be compared to large Austronesian datasets. The major sources of data on comparative Austronesian are two online sources, the Austronesian Comparative Dictionary (ACD) and the Austronesian Basic Vocabulary Database (ABVD). The ACD is by far the most complete, but it is based on cognate sets, and therefore does not cite forms the author, Robert Blust, does not consider cognate to his proposed reconstructions. The ABVD is a list some 200 words covering a large number of Austronesian languages, but includes very little cultural vocabulary. Apart from these online sources, there are two publications which present comparative Austronesian wordlists, the Comparative Austronesian Dictionary of Tryon et al. (1995) [here CAD] and the comparative lexicon of 37 languages in Arnaud et al. (1997). The latter is far more culturally adapted to the Austronesian world, but is somewhat hobbled by being limited to researchers of French origin, hence the rather eccentric choice of languages.

The main source for comparisons with Sulawesi languages is the massive thesis of Roger Mills (1975, 1977) largely unpublished. This includes much material which is not available elsewhere, and is cited extensively in the tables in §3.2. For the Philippines, there are the comparative wordlists in Reid (1971) and the proto-Philippines forms in Blust (2005 and the ACD). The data tables are divided into two sets, those which show connections with Sulawesi languages (Celebic) and a much small set of cognates with Philippines languages.

For the etymologies of Malagasy, the most important texts are the dictionary of Tanala by Beaujard (1998) and the paper on migrations which draws on the same study (Beaujard 2003). Simon (2006) is an extremely wide-ranging study of the Malagasy lexicon, but was prepared before the main Austronesian databases came online. For Malagasy plant names, the immense compilation of vernacular terms in Boiteau et al. (1999) is an indispensable source. Beaujard (2017) is an important study of the cultivated plants of Madagascar which draws in much new lexical and botanical evidence.

Connections with Sulawesi languages

This section examines a series of shared glosses based primarily on a re-analysis of the suggestions in Beaujard (2003, 2017) and Simon (2006). The data tables present comparisons between Malagasy (Tanala unless otherwise noted) and other Austronesian languages. Individual languages are usually from Sulawesi unless noted otherwise. I have entered the Mayotte forms of Malagasy, based on Gueunier (2016), although it seems they do not retain archaisms, but always reflect standard Malagasy. The classification of individual languages can be established from the Ethnologue³ or the Glottolog.⁴

Nouns

I have sorted the nouns into rough semantic groups and placed the wild and cultivated plants at the end of the series of glosses.

Table 1. 'Back, behind' in Malagasy	
Language	Attestation
Malagasy, Mayotte	vòho
Pazeh (Formosan)	bukun
Proto-South Sulawesi	*boko(t?)
Bugis	boko?

Commentary: Blust (ACD) only cites this as Pan-Formosan, although the Pazeh form is clearly related to the Sulawesi languages. The other main Austronesian root, *likud, is attested in the Philippines and Borneo.

Table 2. 'Vagina' in Malagasy		
Language	Attestation	Gloss
Malagasy, Tanala	fàlo	vagin
Malagasy, Antemoro	fala	vagin
Malagasy, Mayotte	fory ⁵	vagin
PWMP	*palaq	vagina
Kaili [Celebic]	palo	anus, buttocks
Napu [Celebic]	palo	anus, buttocks
Kambera [Sumba]	para	female genitalia
Maloh	pala?	vagina

Commentary: Some Sulawesi languages retain the older PAN root *puki.

³ <https://www.ethnologue.com/> Last accessed 12/5/18

⁴ <http://glottolog.org/> Last accessed 12/5/18

⁵ But see under 'anus' below

Table 3. 'Anus, bottom' in Malagasy		
Language	Attestation	Gloss
Malagasy, Tanala	fòry	<i>anus</i>
PMP	*udehi	last, behind
Mori [Celebic]	puri	buttocks, bottom
Uma [Celebic]	puri	after

Commentary: This root, always without the initial bilabial stop is widely attested in Philippines languages, but with the meaning 'last, behind'. Sulawesi languages retain the stop, and at least some have the meaning 'buttocks'. This is not attested in Borneo languages.

Table 4. 'Spirit' in Malagasy		
Language	Attestation	Gloss
Malagasy	-lampo in kokolampo	<i>esprit de la forêt</i>
Sulawesi	rampo	forest spirits

Commentary: This comparison noted by Beaujard (2003).

Table 5. 'Shovel' in Malagasy		
Language	Attestation	Gloss
Malagasy, Antaisaka	sotro	<i>bêche</i>
Malagasy, Merina, Mayotte	sotro	<i>cuiller</i>
PMP	*sudu(k)	spoon
Malay	sudok	shovel
Mandar	sodo'	shovel
Toraja Kada	pesodoh	shovel

Commentary: The usual Austronesian gloss is 'spoon', but this has become 'shovel' in Sulawesi languages as well as Malay and both meanings are attested in Madagascar.

Table 6. 'Knife' in Malagasy		
Language	Attestation	Gloss
Malagasy, Tanala	gòro	<i>coupe-coupe à longue lame</i>
Malagasy, Mayotte	goro	<i>courbe</i>
Tolaki	gologolo	kris
Tagalog [Philippines]	gúlok	large knife
Malay	golok	knife

Commentary: The absence of a final velar argues this may have been adopted from a Sulawesi language and not Malay. This is not the more common root for 'knife' which is something like *piso.

Table 7. 'Money' in Malagasy		
Language	Attestation	Gloss
Malagasy, Tanala, Mayotte	vòla	<i>argent, monnaie</i>
Tolaki	wulaa	gold
Toraja Sa'dan	bulaan	gold
Wawonii	wula	gold
PAN	*bulaw	golden-coloured

Commentary: A very intriguing etymology, discussed at length in the ACD. Widely attested in the Philippines, it seems to have been extended from a colour term to a metal. Although recorded in Ngaju Dayak, it is most common in Sulawesi and other parts of Eastern Indonesia. It seems unlikely such a term would have been in widespread use in the earliest period of maritime contact, so this probably came into Malagasy somewhat later.

Table 8. 'Joist, rafter' in Malagasy		
Language	Attestation	Gloss
Malagasy, Tanala	ray, rairà	<i>solives soutenant le plancher</i>
Bugis	raki?	raft
PMP	*Rakit	raft

Commentary: The shift to 'rafter' in Malagasy is distinctive (presumably the same semantic shift occurred in English) as this root means 'raft' everywhere in ISEA. It is however, also widely attested in Borneo languages, so not necessarily a borrowing from Sulawesi.

Table 9. 'Hill' in Malagasy		
Language	Attestation	Gloss
Malagasy, Tanala	tanèty	<i>colline</i>
Proto-South Sulawesi	*tanete	hill
Bugis	tanete	upland
Pattae	tanete	hill

Commentary: PMP has **buntud/buntul* which is probably unrelated. However, it is surprising how few attestations support this. Replaced in Mayotte. The ABVD does not record this word. The CAD shows that Austronesian has a wide variety of local terms.

Table 10. 'Swelling, lump' in Malagasy		
Language	Attestation	Gloss
Malagasy, Tanala	vòro	<i>gonflement, amas</i>
Proto-South Sulawesi	*ʔboro	swollen
Bugis	boro'	swelling
Da'a	voru	lump

Commentary: No obvious wider Austronesian cognates.

Table 11. 'Park, enclosure' in Malagasy		
Language	Attestation	Gloss
Malagasy, Tanala, Mayotte	vàla	<i>parc à boeufs, enclos</i>
Bugis	wala	enclosure
Toraja South	bala	fence, enclosure
Pattae	bala	fence, enclosure
Banggai	bala	fence, enclosure
but possibly;		
Tamil	வளை va ai	circle

Commentary: No obvious wider Austronesian cognates, although it has been suggested there is a connection with Tamil.

Table 12. 'Whirlwind' in Malagasy		
Language	Attestation	Gloss
Malagasy, Tanala	vàra	<i>tourbillon, trombe</i>
Bugis (Camba)	bara	storm
Makassar	bara	west wind
Pattae	bara	wind
Mamasa	bara?	wind, air

Commentary: Interestingly, the ACD reconstructs **bali* as Pan-Formosan for 'wind' and states that it was replaced in PMP by **hanin*. However, these forms seem suspiciously close to not be connected to Formosan, and this probably indicates a direct voyage to Sulawesi as part of the initial Austronesian expansion. An excellent testimony to the Malagasy/Sulawesi connection.

Plants

The standard guide to the vegetation of Madagascar is Allorge (2008).

Table 13. 'Raffia palm' in Malagasy		
Language	Attestation	Gloss
Malagasy, Tanala, Mayotte	rofia, raffia	<i>raffa</i>
PWMP	*Rumbia	sago palm
Bugis	rumpia	sago palm
Malay	rumbia	sago palm
Ngaju Dayak	hambiaë	sago palm

Commentary: This is a problematic term, as it is almost always applied to the sago palm, *Metroxylon*, in ISEA, but has shifted to the raffia palm in Malagasy. It is possible that some of the Sulawesi terms are borrowings from Malay. This word gave rise to the pen-name of the famous Dutch botanist, Rumphius (1627-1702), who was based in Sulawesi.

Table 14. 'Soaptree' in Malagasy		
Language	Attestation	Gloss
Malagasy, Antemoro	malàni in hazo.malàni	<i>Casearia nigrescens</i>
Proto-South Sulawesi	*langi(y)	<i>Albizzia saponaria</i>
Javanese	langir	shampoo

Commentary: This tree is known in Madagascar because it smells like fish. The corresponding tree in Sulawesi is a saponaceous species used for shampoo. In modern Javanese the word means 'shampoo' but presumably formerly applied to a soap tree. Mills (1977: 750) notes that some Philippines languages have *langig*, 'slime on fish or eels'. Not reconstructed in the ACD.

Table 15. 'Banana' in Malagasy		
Language	Attestation	Gloss
Malagasy, Tanala, Mayotte	(h)òntsi	<i>banane</i>
Bugis	utti	banana
Makassar	unti	banana
PAN	*punti	banana

Commentary: The history of the banana on Madagascar is complex and Beaujard (2017 : 52 ff.) devotes a lengthy section to it. The dominant term today is *akondro*, undoubtedly of Bantu origin. However, an additional set, originally derived from PAN **punti* presumably reflect the triploid bananas brought by the original migrants. The Malagasy forms without initial p- agree with Sulawesi and not with other parts of Austronesian. Blust (ACD) says; 'The Malagasy, Buginese and Makasarese forms agree in indicating a variant **unti*, but until further evidence is forthcoming these will be taken as convergent irregularities'. Since there is so much other evidence linking Sulawesi and Malagasy, this is unlikely to be a coincidence.

Table 16. 'Vine, liana' in Malagasy		
Language	Attestation	Gloss
Malagasy, Tanala, Mayotte	vàhi	<i>liane</i>
Mandar	uake	root
Toraja saʔdan	waka	liana, root
Duri	waka	liana, root
PMP	*wakaR	root

Commentary: In Borneo and other western languages this has usually lost the initial, thus Malay *akar*, Kenyah *aka*. The Malagasy is thus most like borrowed either from Luzon or Eastern Indonesian languages.

Table 17. 'Stalk, stem' in Malagasy		
Language	Attestation	Gloss
Malagasy, Tanala	tàho	<i>tige</i>
Pamona	tako	stalk
Iban	takonj	stalk, twig

Commentary: Attested in both Borneo and Sulawesi, but no obvious wider Austronesian cognates.

Table 18. 'Fruit-bat' in Malagasy	
Language	Attestation
Malagasy, Tanala, Mayotte	fanihy
PMP	*paniki
Proto-South Sulawesi	*pan(ʔ)iki
Konjo	panʔiki

Commentary: This is the 'flying fox', widely eaten in parts of ISEA. This root is widespread in the Northern Philippines and parts of Eastern Indonesia but is unknown in Borneo and western Austronesian languages.

Table 19. 'Midge' in Malagasy		
Language	Attestation	Gloss
Malagasy, Tanala	sisi	<i>moucheron</i> [midge]
Bugis	sissiq	gnat
Proto-South Sulawesi	*si(q)sil	insect
Makassar	sissiliq	insect
Pattae	kasisi	mosquito

Commentary: This term is probably related to an Austronesian root *selɛl 'to insert, stick in', although this set of meanings appears to be confined to Sulawesi.

Verbs

Table 20. 'Carry on back' in Malagasy		
Language	Attestation	Gloss
Malagasy, Tanala	rèngitra	<i>action de porter sur le dos</i>
Proto-South Sulawesi	*(d)éne(C)	carry on back
Bugis	reŋeq	carry on back
Makassar	deŋeq	carry on back
Madurese	man/deŋeq	carry on back

Commentary: No obvious wider Austronesian cognates except Madurese.

Table 21. 'Chew, masticate' in Malagasy		
Language	Attestation	Gloss
Malagasy, Tanala, Mayotte	hòta	<i>mâcher, mastiquer</i>
Proto-South Sulawesi	*kota	chew
Bugis	ota	chew
Ma'anyan [Borneo]	kota	eaten

Commentary: Blust (ACD) does not reconstruct this root and the numerous roots for 'chew' in PAN are quite different.

Table 22. 'Fish by hand' in Malagasy		
Language	Attestation	Gloss
Malagasy, Tanala	sàka	<i>pêche à la main dans des trous</i>
Mambi	ma.sakka bau	to fish
Tabulahan	maŋ.saka bau	to fish

Commentary: No obvious wider Austronesian cognates.

Table 23. 'Carry, sling round body' in Malagasy		
Language	Attestation	Gloss
Malagasy, Tanala	sariry	<i>action de transporter</i>
Toraja Sa'dan	sariri	carry slung around body
Wewewa	lilli	<i>porter en bandoulière</i>
Ema	slili	<i>porter en bandoulière</i>

Commentary: No obvious wider Austronesian cognates.

Others

Table 24. 'Naked' in Malagasy		
Language	Attestation	Gloss
Malagasy, Tanala	bèdañi	<i>nu</i>
PWMP	*tilanzaŋ	naked
Proto-South Sulawesi	*belarj	naked
Bugis	belarj	naked

Commentary: Blust's PWMP (with only three witnesses) is clearly somehow related, but the Sulawesi forms show a direct relationship with Malagasy.

Table 25. 'Full' in Malagasy		
Language	Attestation	Gloss
Malagasy	vòky	<i>plein</i>
Malagasy, Mayotte	vòky	<i>rassasié</i>
PMP	*bukél	seed, swelling, lump
Ilokano [Philippines]	bukél	seed, lump
Proto-South Sulawesi	buke	full

Commentary: The Malagasy is certainly cognate with Sulawesi, but only perhaps with the other PMP forms. The semantic shift is highly distinctive under any circumstances.

Table 26. 'Certainly' in Malagasy		
Language	Attestation	Gloss
Malagasy, Tanala, Antemoro	màko	<i>ma foi, assurément</i>
Bugis Camba	mako	certainly

Commentary: Possibly a late borrowing. Not in the ACD.

Connections with Philippines languages

Malagasy also shows a limited number of items which connect with Philippines languages. Given the early Spanish and Portuguese connections across the Indian Ocean, late borrowing cannot be excluded.

Table 27. 'Cultivated field' in Malagasy		
Language	Attestation	Gloss
Malagasy, Tanala	sàha, sàka	<i>champ cultivé, vallée</i>
Malagasy, Mayotte	sàha	<i>lit d'un ruisseau</i>
Tagalog	saka	field

Commentary: No obvious wider Austronesian cognates.

Table 28. 'Physic nut' in Malagasy		
Language	Attestation	Gloss
Malagasy, Tanala	tañatàña	<i>pignon d'Inde, Jatropha curcas L.</i>
Tagalog, Cebuano	tangantangan	castor, <i>Ricinus communis</i>
Tausug	tangantangan	castor, <i>Ricinus communis</i>

Commentary: The physic nut is a New World species, apparently rapidly spread around the world by the Portuguese and Spanish. The nut is extremely bitter and used as a purgative, hence the semantic transfer from castor. Beaujard (2017: 274) says that the earlier meaning of *tañatàña* in Madagascar was castor. The connection with Luzon would be surprising, but Tausug is spoken in the Sulu archipelago and so would have been connected with the trade routes linking Sulawesi, Borneo and Madagascar.

Table 29. 'Bean' in Malagasy		
Language	Attestation	Gloss
Malagasy, Tanala	àntaka	<i>dolique</i> , <i>Dolichos lablab</i> L.
Palawan	äntak	bean
Molbog	antak	bean
Visayan	hamtak	<i>Vigna unguiculata</i> (L.) Walp.
Madurese	artak	<i>Vigna radiata</i> (L.) Wilczek

Commentary: Lablab, *Lablab purpureus*, is an indigenous African bean, exported to Asia (Beaujard 2017: 131 ff.). However, the name is Austronesian and refers to a wide variety of pulses in ISEA languages. Replaced in Mayotte.

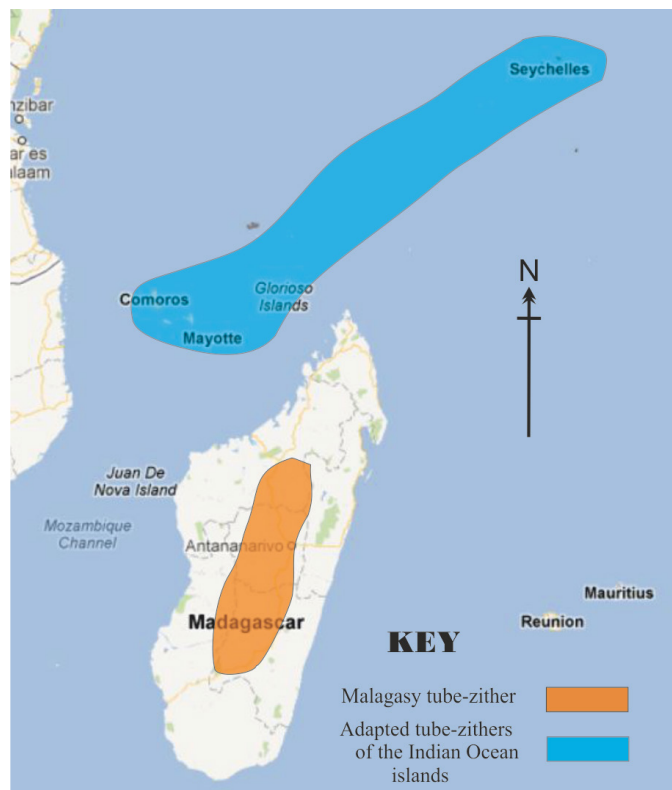
Non-linguistic evidence: the tube-zither

One of the most distinctive musical instruments in the Indian Ocean region is the *valiha*, an idiochord tube-zither (Domenichini 1984; Razafindrakoto-Montoya 1997, 2006; Blench 2014b). Such zithers are typically made from a single internode of a broad-diameter bamboo, and the strings are formed from the raised epidermis of the bamboo. Small bridges at either end keep the strings taut and also act to tune them. Modern instruments have wire strings and even tuning pegs to make for increased durability, but these are recent innovations. The general principle is known widely across SE Asia, although more commonly involving instruments made from a half-tube of bamboo laid horizontally on a surface and struck with light beaters, as in Borneo and Sumatra. The player holds the instrument upright, across the chest or horizontally outwards from the body, sometimes perched on a resonator, and played it with two thumbs (Photo 1).

The *valiha* is the national instrument of Madagascar, although the tubular form is only found in the highlands area and is strongly associated with the Merina people. The seventeenth century traveller Peter Mundy (1919) first described the instrument, which he saw in Madagascar in 1638. Instruments with a similar pedigree are also found in parts of island SE Asia, including Sulawesi, Maluku and Timor, but not Borneo (Sachs 1928, 1938; Kaudern 1927). Maps 1 and 2 show the distribution of the hand-held tube-zither at the eastern and western ends of the Indian Ocean. The red shading on the map of Madagascar shows the restricted highland distribution of the



PHOTO 1. FEMALE VALIHA PLAYER, 1920s. SOURCE CC



MAP 1. EASTERN DISTRIBUTION OF THE TUBE-ZITHER

tube-zither, while the blue shading marks the extended forms found on Indian Ocean islands. This instrument is unique to these two regions and does not occur elsewhere in the world.⁶

Map 3 shows a synthesis of information concerning the spread of the tube-zither. The type of instrument common to Sulawesi and Madagascar is not found in Borneo or the coastal areas of East Africa. It seems likely that it must have travelled with individuals direct from Sulawesi or other nearby islands after the establishment of the route to East Africa. The tube-zither was thus carried in the centuries following this, probably not after the eleventh century, when traffic with the east coast of Africa ceased (Blench 1994, 2010).

Genetics

The genetics of the Malagasy have interested many researchers, and the earliest publications set out to test the SE Asian/Bantu mixed heritage hypothesis drawn from linguistics (e.g. Hurles *et al.* 2005). Inevitably, different samples and different techniques produced variable conclusions. Regueiro *et al.* (2008) claim to have detected an Austronesian signature in ‘East Africa, Madagascar and Polynesia’ (also Razafindrazaka *et al.* 2010). At one point we were asked to believe ‘a small cohort of Island Southeast Asian women founded Madagascar’ (Cox *et al.* 2012) despite all other types of evidence pointing in exactly the opposite direction. Kusuma *et al.* (2015) detect the signature of ‘sea nomads’ in Madagascar but at a conference presentation in Paris in 2015, Kusuma *et al.* compared both Y-chromosome (i.e. nuclear or paternal) DNA with maternal (mtDNA) for some 3000 individuals from Madagascar and Eastern Indonesia. The general result was that the paternal line was far more affiliated to the Banjar (local Malay in SE Borneo) than the Barito, but the maternal lines were more affiliated to Southern Sulawesi, Maluku and other eastern islands. At first sight this is difficult to interpret; had some of the early Malays become Barito-speaking? Presumably the mobile populations were marrying (by consent or seizure) women from the Eastern Indonesian region. The Y-chromosome population apparently closer to Malagasy are located near the Wallace line in southern Sulawesi, Eastern Borneo, and Lesser Sunda islands.

Human geneticists announce their conclusions with a certainty which scholars in other disciplines would consider highly provisional. Neither the ceramics nor the linguistics point to a simple story; clearly a series of complex intermediate stages, involving both the Comores and the East African mainland will play a part in the narrative. There is no doubt that the marked differences between paternal and maternal DNA will need to be interpreted; and as autosomal studies appear they will also be integrated.

⁶ Sachs (1927) also lists Guyana, the Malay Peninsula and the Balkans [!] but checking back to his references, the instruments are structurally quite different.



MAP 2. WESTERN DISTRIBUTION OF THE TUBE-ZITHER



MAP 3. SPREAD OF THE TUBE-ZITHER FROM SULAWESI

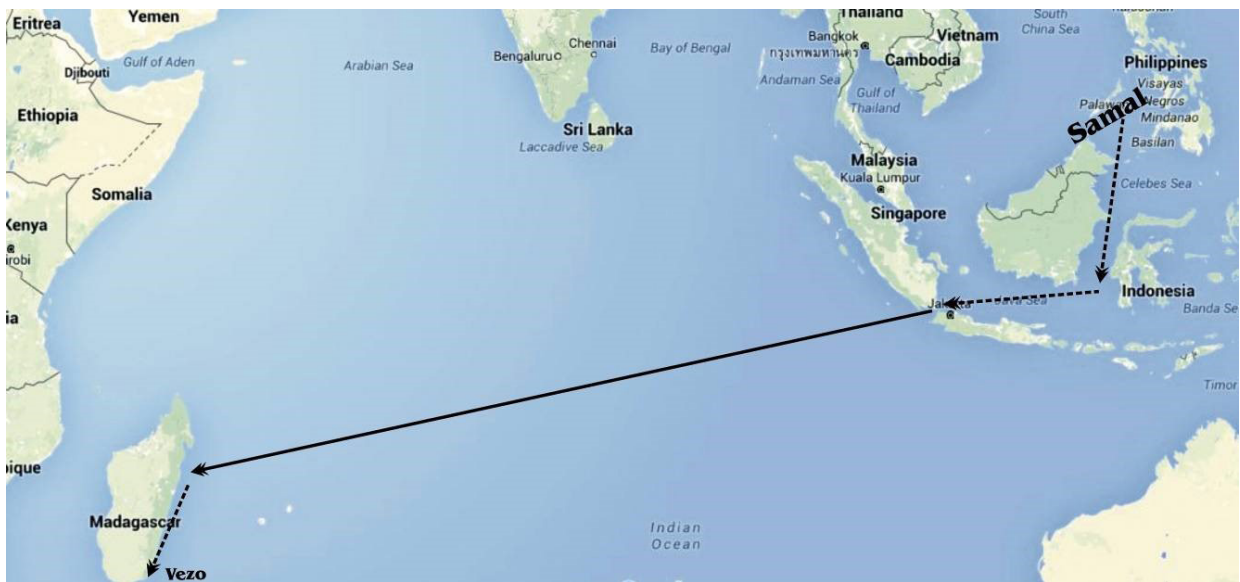
The Vezo hypothesis

Dahl (1988) argued for a link between the Vezo and the Bajaw or Sama Laut, the sea-nomads who voyage between islands from the southern Philippines to Timor. Their language is part of a group of languages known as Samalic, which is not part of the Philippines group of Austronesian, but most closely related to SE Borneo languages (Blust 2005). The Bajaw are nomadic fishermen, living on their boats and trading sea produce for staples and manufactured trade goods. The Vezo are more land-based but also spend many months a year at sea, living on sandbanks fishing (Koechlin 1975; Sanders 2005). There is little or no direct linguistic evidence in basic vocabulary for a connection between Vezo and Bajaw. However, it is very striking that Vezo marine fish names are very different from other Malagasy names, although they resemble those of their neighbours, the Antanosy (Bauchot & Bianchi 1984). Given that Vezo is generally close linguistically to Merina, this is quite surprising and may point to a distinct origin for their fishing culture. It certainly would not be unreasonable to imagine Bajaw, following the route pioneered by the Malay ships, reaching Madagascar independently. Simon (2006: 474) argues that the etymology *Vezo* < *Bajaw* is phonetically plausible. However, this hypothesis needs more positive linguistic evidence before it can be accepted uncritically.⁷ Map 4 shows a possible route for a Bajaw migration to Madagascar.

Conclusion

The weight of evidence still points to the most significant component of Malagasy coming from Barito and related languages, with a smaller though still significant element from Sulawesi and possibly the Philippines. The most probable model is that with the rise of Srivijaya in the sixth century, Banjarese trading ships were picking up crew, willing or unwilling, in the region between SE Borneo and Sulawesi. So the 'mixed crew' hypothesis is most likely; individual ships may have been weighted more in favour of one or other ethnicity. Nonetheless, the distribution of a musical instrument such as the *valiha* among the highland Merina, points to some sort of direct Sulawesi connection, so subsequent independent voyages by both 'pre-Bugis' and Samalic peoples are also likely. Ceramics suggest an important role for the Comores as a staging post, but the replacement of its language by Swahili-related lects means the linguistic evidence has been overwritten. The genetics are hard to interpret, but it is striking that Malay is not the dominant language in Malagasy as might be expected from these results. Probably the most obvious lacuna in the data is archaeology; we simply need more sites and dates from both ISEA, the Comores and Madagascar.

⁷ Beaujard (2017: 374) has a note that Malagasy *fintsa*, *banana séchée*, might be of Samalic origin but provides no evidence.



MAP 4. THE VEZO HYPOTHESIS

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From the Red Sea to the Indian Ocean and Beyond

The maritime ‘silk’ roads of the Eurasian World Economy 200BC-AD500

Sing C. Chew

Helmholtz Centre for Environmental Research-UFZ Leipzig, Germany
E-mail: sing.chew@ufz.de

Abstract

Trade exchanges have occurred for at least the last five thousand years of human history. Started most often in a regional context, we find the existence of such trading patterns between the civilizations located in the river valleys of the Nile, the Euphrates–Tigris, the Indus, and the Hwang Ho five thousand years ago. Such trading activities also connected other communities located in eastern Africa, the Gulf, South Asia, and Southeast Asia. The volume and scale of trade increased as urbanization and socioeconomic activities rose over world history. By late prehistory, we find the formation of the First Eurasian World System extending from China through Central Asia, Southeast Asia, South Asia, Arabian Peninsula and the Gulf Region, East Africa to the Mediterranean and Europe. Periodizations of the spatio-temporal connections over such a wide expanse have varied. As a rough estimate, such an ancient world economic system was connected by the time of the late Roman Republican period and China’s Han Dynasty, though other regions in this world system had much earlier trade exchanges. These trade connections were via land and sea. This paper focuses on the Maritime Silk Roads of the system, and reveals the extensive connections between regions, the type of products and goods exchanged, and thus the globalized nature of this trading system.

Introduction

Over world history, exchange of goods and services has been one of the main forms of interaction between human communities located in different regions of the world. With the advent of the Neolithic Revolution and the production of surplus, such trade exchanges ensued within a specific region, and between different regions of the world. Signs of these trading activities between civilizations were evident in the Fertile Crescent as early as five thousand years ago. Trading expansion and coverage became increasingly documented during the Bronze Age in Europe, Eurasia, and Asia (Parker 2012; Kristiansen and Larsson 2005; Higham 1996; Kohl 2007; Liu 2012; Ratnagar 2004, McLaughlin 2014).

Not only do these trading exchanges foster the accumulation processes, they also facilitated and intensified the dynamics between the different social systems’ relations with Nature. The interactive trading process also engenders the transmissions of ideas, cultural traits, and technological knowledge such as the fabrication of metals. These trading circuits increasingly joined different regions closer together in terms of flows of connectivity in the socioeconomic spheres, and in some ways, introduced the sense of duration and space through the categorization of time that is necessary to transport goods from one place to another. Along with this, comes the awareness of the changing seasons in terms of Nature’s rhythms when the transportation of goods and services required the seasonal monsoon or coastal winds to power the sea vessels that carried the goods and peoples to various shores. With time, the trade linkages encompassed different regions with dense networks of trade routes within a region, and also extended these networks between regions.

Towards the end of the prehistoric period (c. 200 BC onwards), these trading exchanges were extensive, for by then they connected Europe, the Mediterranean, the Arabian Peninsula, East Africa, the Persian Gulf, Central Asia, South Asia, Southeast Asia, and China through a series of both land and sea trading

routes. Trade exchanges via land and sea, and movement of peoples, defined this increasingly global system. The Roman Empire was at one end with China at the other end, and Central Eurasia, South Asia and Southeast Asia geographically somewhat in the middle of the system. From approximately 200 BC onwards, the emergence of a Eurasian world system of trade connections extended from the Roman Empire in the West to China in the East. Such was the scope of the trading system at the dawn of the new millennium that we propose to cover from 200 BC – AD500 with a particular attention on the Indian Ocean/Red Sea portion of this Eurasian world economy. Our examination will be on the maritime aspect of these trading routes, commonly known in world history as the silk roads, in our case, the *maritime* part of the silk roads of the *First* Eurasian world system.

We use the term world economy or system instead of world-economy (with a hyphen) as the latter has been utilized by world-systems specialists for a historical structure that has a certain set of socioeconomic and political attributes and trends ‘capitalistic’ in nature that do not necessarily cover a wide geographic space. To world-systems specialists, this historical structure of a world-economy is a world in itself, hence the hyphenation between world and economy (Wallerstein, 1991). In our case, a world economy or system is not distinguished necessarily by a mode of production but that it covers a *global geographic* space with multiple cores/regions linked at a minimum by a trading system. ***It is an evolving global economy ‘of the world’.*** Depending on the temporal sequence, an economy of the world encompassing different chiefdoms, kingdoms, civilizations, empires, and states in a global division of labor, technology, and knowledge circumscribed by different cultural patterns.

The First Eurasian World Economy: The Maritime Silk Roads

I From Europe and the Mediterranean to the Red Sea

Trade exchanges between Europe, the Mediterranean, Central Asia, the Gulf Region, and South Asia did not initiate with the Romans at the end of the first millennium BC. If one examines third millennium BC world history in terms of trading connections within a region and between regions of the world, there was by then an evolving economic exchange network within the Afro-Eurasian geographic context that included Egypt, Mesopotamia, the Arabian Peninsula, the Levant, Anatolia, Iran, and the Indus Valley (Chew 2001, 2007; Frank and Gills 2000; Possehl 2002; Kohl 1987; Ratnagar 2004; Wright 2010). During the Bronze Age, such systemic connections via trade were an outcome of a division of labor whereby social systems especially those located in river valleys and watersheds sought natural resources such as copper, precious stones, pearl, ivory, gypsum, marble and wood, for their production activities and the reproduction of their socioeconomic lifestyles from the peripheries. In turn, they exported to the peripheries manufactured items and cultivated agricultural products such as bronze wares, textiles, wheat, etc. Mostly, such exchanges occurred because the immediate environments of these social systems were either devoid or depleted of these resources (such as wood) as a result of the intensification of extraction of these products that has occurred historically to satisfy the urbanization process, population growth, and hierarchical reproductive needs and surplus generation of these systems. Such historical dynamics led to the expansion of the world economy then and continued. Over world history from the Bronze Age to the Iron Age, a series of structural crises, commonly known as Dark Ages, experienced by this globalized system led to system transformations (Chew 2007, 2008).

The end of the Bronze Age witnessed a system crisis of wide-scale, and according to Drews (1993), the Bronze Age crisis in the Near East and the eastern Mediterranean emerged in sporadic upheavals in the last quarter of the 13th century BC. Stretching from Greece, the Cyclades, and Crete through to Anatolia, Cyprus, Egypt, Syria and the southern Levant, the catastrophe was widespread. With the exception of the periphery noted above, the core centers of the system were in crisis. Economic recovery returned around 700 BC for the Mediterranean region, and what followed was a series of colonization and

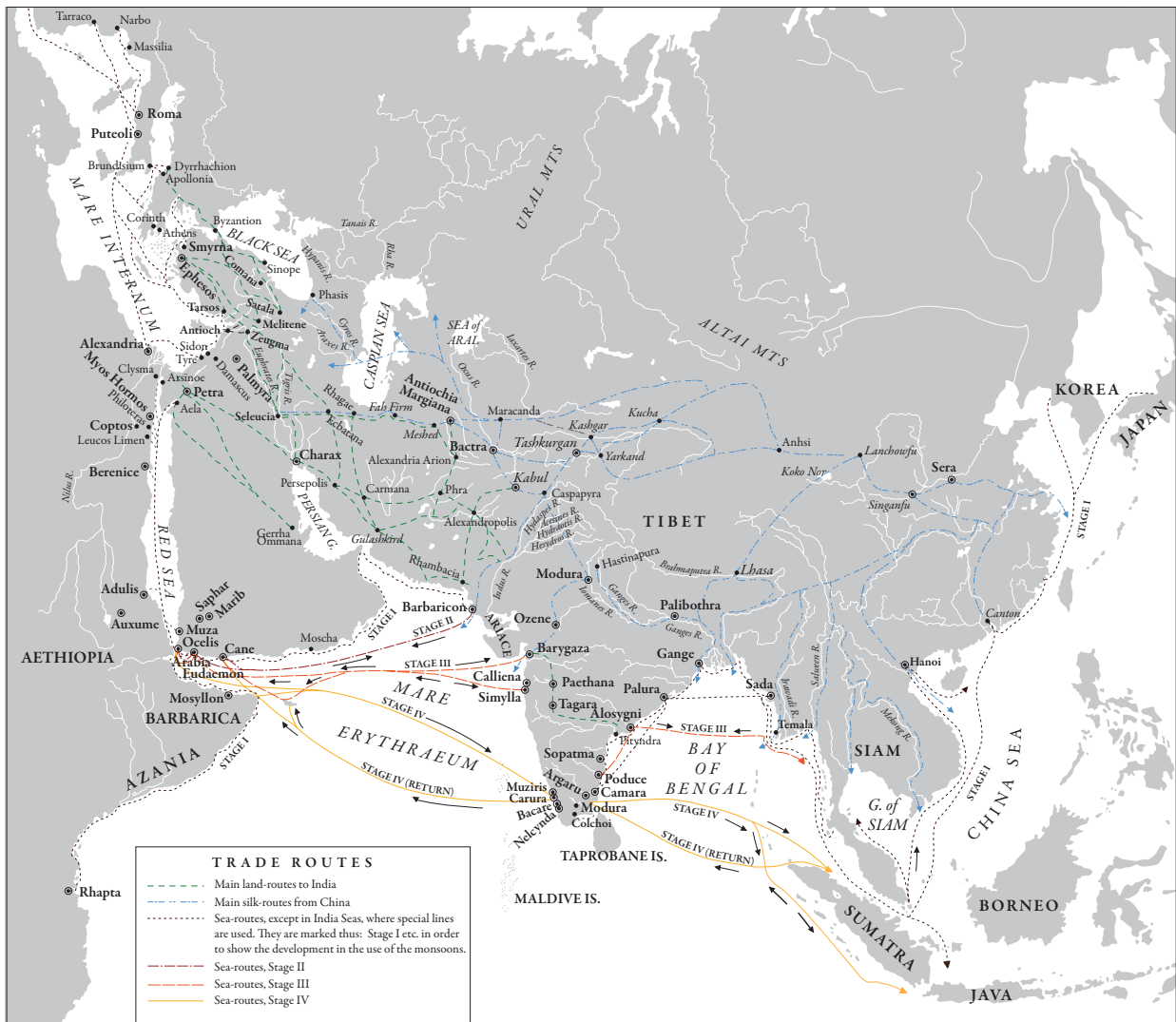


FIGURE 1. THE GLOBAL TRADING WORLD 200BC–AD500

expansion of trade networks under Greece and Phoenicia (Chew 2007).¹ For the Greeks, it came in two phases. The first between 775 and 675 BC was the colonization of western Asia and southern Italy, Sicily and southern France. The second between 675 and 600 BC was focused not only on colonization but as well, commerce. The latter led to strengthening and fixing of the trade routes already in existence. Besides Greece, other centers such as Phoenicia, Egypt and Persia were also in establishing trading networks, and as Braudel (2001:225) puts it, the Mediterranean never became a ‘Greek Lake.’ With these different polities, no core center ever gained control of the Mediterranean; it is only with the arrival of Rome towards the end of the first millennium BC, that the Mediterranean became a Roman Sea. The emergence of Rome as a major core center of the world system – there are others as well during this time period in the East such as China – by the end of the first millennium also led to the expansion of the trade connections between East and West. It is at this point in world history that we have the development of the ‘first Eurasian world economy’ connecting the West with the East.

Beginning from the early Roman period (1st century BC – 3rd century AD), this increasingly globalized trade networks covered at least seven regions of the world economy. In a world historical context, the

¹ For a periodization of long-term economic downturns of the system, see Chew (2007).

scale and volume of trade had a globalized orientation stretching from West to East and vice versa. (See Figure 1). Whereas, during the earlier Bronze Age, the trading activity was more regional in orientation as the trading connections from the eastern Mediterranean across the regions (Red Sea, Persian Gulf, Indian Ocean) to Southeast Asia and East Asia were not that developed.

The trading networks encompassing Europe and the Eastern Mediterranean under Roman rule were established over a period of time in line with the pace of Roman conquest. Up to the second century BC, the Roman trading networks focusing on land routes were centered on Italy, North Africa, Sicily, Sardinia, Carthage, and the Aegean. The more remote areas such as northern Gaul, northwestern Spain, eastern Anatolia, northern Mesopotamia, Egypt, Britain, and Dacia were connected later following Roman conquest. The Romans achieved total control of the Eastern Mediterranean region after 31 BC when Egypt came under the Roman Empire. By AD 200, the western portion of the globalized world economy stretching from Britain in northwestern Europe and south to the Mediterranean and North Africa and eastwards to the Near East were set with Roman-built roads over mountain passes, and along valleys as well as maritime routes (including the river systems) crisscrossing the Mediterranean, the Baltic and the Black Seas (Drummond and Nelson 1994, Millar 1981, Garnsey and Saller 1987).

During the Roman period, in the western part of the Eurasian world system, the goods and peoples that traversed these trading networks reflected the economic, social, and political interests of the core areas. With Rome being the major core center, transportation of goods and peoples were shaped by the political economic needs of Rome. Between 200 BC to AD 400, the Roman world in the west comprised of Rome and Italy, Spain, Syria, Greece, Gaul, North Africa and west Asia. The eastern portion of the Roman Empire had several urban centers such as Carthage, Alexandria, Constantinople, and Antioch which were the large metropolises that were connected to the land and maritime routes to Central Asia, the Arabian Peninsula, the Persian Gulf, East Africa, India, Ceylon, Southeast Asia and China. Notable among these urban centers within the Empire and beyond were Byzantium/Constantinople, Alexandria, Antioch, and Ctesiphon. Byzantium founded by Greek colonists from Megara in 657 BC was one of the gateways to the East via the Black Sea. With its natural harbor and location, Byzantium could control the land and sea routes between Asia and Europe of this portion of the Eurasian world system. Its port handled goods from the north in the form of amber, furs, metal and wood, from the Mediterranean, the oil, grain, flax, and papyrus, and from the East mainly the spices. Furthermore, Byzantium also serviced the overland trade routes between the West and the East of this region of the Eurasian world system.

Byzantium by no means was the only urban center that participated in the Eurasian world system land trade network. Other centers radiated from the shores of the Eastern Mediterranean such as Antioch, Tyre, etc. The northern route of this land trade network starting from Byzantium/Constantinople traversing the Black Sea and travelled eastwards to Bactria where there were trade routes along the Oxus River and the Caspian Sea. Further eastwards of Bactria, the caravans would join on to the northern silk route traversing Central Asia across northern Tibet to China. Along this route flowed the goods from the Roman Empire eastwards to China, Indian products northwards, and Chinese silk and other items westwards.

The central portion of the trade routes that radiated from the Eastern Mediterranean started from Antioch, Palmyra or Petra. Here the caravans would move south eastwards along the Euphrates and Tigris river systems to Seleucia, Ctesiphon, and Charax. From these urban centers, the goods would either be shipped via the Persian Gulf or by land routes towards India. At Seleucia, the goods could also be transferred to the silk roads that radiated towards Antiochia and onwards to the Central Asia and beyond. After Antiochia, the silk routes would be part of the major silk road system spanning Central Asia, Afghanistan, Tibet, India, China and mainland Southeast Asia. Instead of seeing the silk route network as one mainly stretching either eastwards and westwards between the Mediterranean and the South China/East China Seas as it is

normally understood, the silk routes also radiated southwards to northern India (Indus and Ganges river systems and the Bay of Bengal), and the mainland Southeast Asia coastal zones of Burma, Thailand and Vietnam. Given such a geographic span of trade network linkages, the increasing globalization trajectory of a Eurasian world system should be noted. One can assume that by the first century AD such a globalizing network of trade linkages was firmly in place if not earlier.

The Maritime Silk Routes were facilitated by the discovery of the monsoons in the later part of the second century BC that helped to reduce sailing times. The annual monsoons determined the sailing times and, as well, connected the Red Sea, East Africa, Saudi Arabia, and India together in terms of trading and exchanges (Sidebotham 2011; Sheriff 2010, Mitchell 2005, McLaughlin 2010). Based on these monsoon systems, the rhythm of trading patterns and economic life on the East African coast, Saudi Arabia, South Asia, and even as far as Southeast Asia and southern China were determined by annual changes in directions of these winds. According to the *Periplus*, Roman merchants heading for Arabia departed in September whereas those intending for the west coast and southern part of India would leave between June and September (Young 2001, Sidebotham 2011). Such timing was contingent on the frankincense harvest in Arabia in the case of those merchants involved in this trade, and the timing of the monsoon winds. For those ships leaving from the Red Sea ports to East Africa, departure times were between November and April and returning between May and September. For India, vessels would take advantage of the southwest monsoon blowing around August taking the vessels to India across the Indian Ocean; a distance of over 1700 kilometers from Arabia to northwestern India. Those going to southwestern India would have traversed over 5,000 kilometers. Even using the monsoons, sailing time was about two to three months going to India. The return trip from India to the Red Sea would only take place when the northeast monsoon is blowing and usually this does not take place until November. In total, a year's duration – including the wait for the change in the monsoon winds for the return journey – was usually the norm. Estimates of about 120 ships left for the East each year visiting Somalia, East Africa, and India from Egyptian *entrepôts* such as Alexandria (Warmington 1928, McLaughlin 2010, 2014).

II From the Red Sea to East Africa and the Gulf

The Eurasian world system from the eastern part of the Mediterranean spans to the East via land, river systems and seas. The maritime routes in the north were via the Black Sea with Byzantium/Constantinople as the gateway, in the south the trade routes were via the Red Sea and the Persian Gulf. For the western part of Red Sea region, the sea routings started from Alexandria on to Clysma, Myos Hormos, Philoteras, Leukos Limen, Nechesia and Berenike, and via ports such as Adulis, Mundu, Damo, Opone, and along the east African coast to Rhapta (Casson 1989, Ptolemy 1991, Strabo 1917).

The Red Sea

The port of Berenike, the southernmost port of Roman Egypt located on the western part of the Red Sea south of Myos Hormos, was historically a port that had a long history of being a trading center even during the time of the Ptolemies. Roman Berenike flourished up to the first century AD. Berenike then was part of the maritime trading route involved primarily in the lucrative spice trade. Besides spices and incenses, imports from Southeast Asia were thought to have been transshipped on their way to the Mediterranean. Sidebotham (2011), in his team's excavations, had uncovered a bead supposedly from East Java dated to no earlier than the fifth century AD. The excavations also yielded many botanical and artifacts from South Asia, and from the northwestern region of the Indian Ocean. Visitors from sub-Saharan Africa, southern Arabia, Nabataea, Palmyra and Indian sailors and merchants mingled with the local population. Starting from the second century AD, there was a sharp decrease in the quantity of coins, pottery, and datable finds (Sidebotham 2011). It lasted through to the fourth century AD with a decrease in shipping and reduction of harbor facilities. Population levels went down so did a number of places in the Eurasian world for this time period of decline. Local wars also erupted among the states

of Saba, Himyar, and Hadramat. Such conditions reflect the global systemic Third Dark Ages occurring from AD 300 onwards (Chew 2007).

Trading contacts of Berenike with South Asia were mostly with Muziris and Arikamedu on the southern coast of India and Taprobanê. Taprobanê exported honey, ginger, emeralds, amethysts, gold, silver and other metals to the Red Sea ports including Berenike. Large quantities of Bronze Roman coins (circa AD fourth century) have been discovered on the island. Instead of gold soldrii, bronzes have replaced gold and silver as the base metals indicating perhaps of an economic downturn that dovetailed with the period of global collapse that has been widely reported – the Dark Ages of Antiquity (Chew 2007).

The peak of trade for Roman Berenike was the first century AD and through to the first part of the second century AD. The third century AD experienced upheavals in both the political and economic arenas. Upturns returned in the middle of the fourth century AD and continued until the fifth century AD, after which it went into decline (Sidebotham 2011). It experienced ups and downs in its trading activities reflecting the rhythms of the then global economic system (Chew 2007). The material culture began to utilize materials that are local in nature instead of those imported from India or from the Mediterranean. Such shifts clearly indicate the demise of the ongoing global trade dynamics during the period of the Third Dark Ages (Chew 2007). Local production of materials for consumption was the predominant theme. Berenike's fate was eventually sealed by the middle of the sixth century AD and the city was abandoned by this period.

East Africa

On the east African coast, south of Egypt, was the centralized kingdom of Aksum. It is a region that has not had much archaeological explorations. Our sources come mostly from the *Periplus*. The kingdom of Aksum was at its height between the late third to the seventh centuries AD. With its port at Adulis, similar to other Red Sea trading marts, products from the region were exchanged. Goods from northwestern India were available such as iron, dyes, and textiles. Adulis also exported ivory, turtle shell, rhinoceros horns, and hippopotamus hides from the interior of the African continent (Seland 2010, McLaughlin 2014). Besides these items, African slaves from the interior were also available for trading exchanges (Horton and Middleton 2000; Charlesworth 1970; Wheatley 1959; Chew 2001). Historical sources have indicated of African slaves being exported to the Mediterranean, South Asia and China from the ports on the East African coast. The dominance of the Roman trade is reflected in the discovery of Roman currency, a medium of payment for these trade exchanges.

There were other parts of the East African coast that formed part of this Indian Ocean trading system. Long distance trade perhaps for this region started around 100 BC when the region became part of the trading system of the Eurasian global system (see for ex., Horton and Middleton 2000). Unlike archaeological sites in India, the sites here on the East African coast that has been excavated have yielded lesser finds of coins and ceramics. Primarily, the trade was mostly conducted by Arabian, Roman traders and sailors combined with Indian and perhaps Southeast Asian ones. In exchange for the African products, Roman traders provided Egyptian cloth, colored glass, brass and copper pans and drinking vessels. Because of the scarcity of good quality iron, Roman traders also provided this metallic substance for the making of knives and other weapons. Indian products secured were also part of the trading range of goods.

After the ports on the Red Sea, come the ports of the northern coast of Somalia such as Avalites, Malao, and Mundu. The eastern coast of Somalia had ports such as Opone. These ports of Somalia were also trading marts offering East African products such as ivory, tortoise shell, rhinoceros horn, etc. Besides these goods, there were also the incenses and other items such as frankincense, myrrh, and cassia. Myrrh was used as an ingredient in perfume, as an incense that was burnt during funerals and religious offerings, and lastly as an ingredient in medicines. Besides exporting to Roman Egypt, these Somali marts also exchanged with the ports located in southern Arabia on the southeastern portion of the

Red Sea. In this manner, East Africa formed a component of the incense trade network that stretched from Southeast Asia, South Asia, Southern Arabia to the Red Sea. Incenses were in high demand in the Mediterranean region and Europe. These products used for religious purposes and for certain lifestyles made the incense trade a lucrative trading commodity similar to the spice trade. East African incenses were also shipped from Ethiopia to Roman Egypt via the Nile River.

Sailing south on the east African coast was the port of Rhapta located on the modern day Tanzanian coast. From the *Periplus*, this was the last port of the east African trading system. It had trade contacts with Muza located in southwestern Arabia across the Indian Ocean. Similar types of products that was available in Adulis were also traded here between Arab, Roman, and Indian merchants. Ivory, rhinoceros horn, and tortoise shell were the main exports from this region. Rhapta's importance stretched from the mid-first to the mid-second century AD, with the ports on the Red Sea such as Hafun Main being active from the first to the fifth century AD. They had the strongest trading relations with India during the second/third century AD and ceased after the fifth century AD. Such decline in trading activity can be accounted by the Dark Age collapse of the system starting from the third century AD onwards with its peak of decline around the fourth-fifth centuries AD (Chew 2007). According to the *Periplus*, the Roman merchants did not venture along the East Africa beyond Rhapta.

Arabian Peninsula

The Arabian Peninsula borders both the Red Sea and the Persian Gulf. As such, its coastal areas were dotted with trading areas and towns that for centuries before the formation of this first global trading system had partaken in the regional trade handled by Greek and Arab merchants from Alexandria southwards and jointly with Indian merchants who also arrived from northwestern and western India.

The Arabian Peninsula (*Arabia Felix* to the Romans and *Arabia Eudaimon* to the Greeks) had close ties to East Africa with control of Azania under the kingdoms of Himyar and Saba. Along with two other kingdoms, Qataban and Hadramawt both located in the southern part of the peninsula, the control of the southern seaborne routes of the Red Sea and East Africa were shared.

The ports of Muza, Okelis, al-Madhariba, and Qana located in the southern portion of the southern Arabian Peninsula; and in the territories of these kingdoms were part of the overall trading systems of the Red Sea and the East African coast. Another port, Leuke Kome located on the eastern portion of the Red Sea in Arabia at the mouth of the Gulf of Aqaba, served the aromatics (such as frankincense) trade and as a port for the seaborne and overland routes to the Gaza. Goods from the northern part of the Red Sea and Alexandria and beyond were transshipped to East Africa and India, and those from these latter regions were shipped northwards either via maritime or overland routes. Excavations have revealed settlement patterns from as early the first century AD or earlier. For example, in the 6th century AD, the kingdom of Himyar was acting as the middleman for the Romans in this region of the trading system (Tomber 2008, Mango 1996).

The main product shipped within this region was aromatics such as myrrh and frankincense. Such trade was established by the 8th century BC. Seaborne and land routes across the Arabian Peninsula were utilized, and for goods destined for the Gaza, the overland route was popular with Qana and Timna funneling the goods via overland to the Gaza and beyond. Qana acted as the *entrepôt* for the southern part of the Red Sea region, East Africa, and South Arabia. Qana can be seen to have been established between the mid-first century BC and the late first century AD with the most intense expansion between the second and the fifth centuries AD (Tomber 2008, Seland 2010). At Qana, textiles, metals, such as copper and tin, coral, storax, besides frankincense, were exchanged. Moscha Limen or Khor Rori located to the east of Qana in south Arabia founded in almost the similar period was also an incense center that supplied Qana with frankincense. Indian merchants and sailors would land at Khor Rori to spend the winter before sailing home to India (Sedov 2007). Qana as well, served as a port for ships going to the northern and southern parts of India. The island

of Socotra on the Indian Ocean had also Arabs, Indians and Greeks living on the island and it was a stop for ships on their way to India and from East Africa (Hourani 1995).

Further east of Khor Rori is the Persian Gulf, and according to the *Periplus*, there were two main towns/ports. Apologos situated at the mouth of the Gulf, and Omana located on the Arabian Peninsula were the main trading ports. Occupied between second half of the first century BC to second century AD, large quantities of Roman wares such as glass and Indian products have been excavated. Associated with Omana and located inland was Mleiha. Goods such as Roman glasswares, Indian pottery, Egyptian and Hellenistic amphorae have also been found. Their relationships to each other have been hypothesized but the relations have not been confirmed. The role the Persian Gulf played in the overall trading system of the eastern portion of this Eurasian World System is not fully established by the low level of excavations attempted to date, especially on the Iranian part of the Gulf. Was it a transshipment point between the eastern Mediterranean and India? Most likely from what has been excavated so far, ports such as Apologos handled the products from southern Mesopotamia or from the eastern Mediterranean exported from Palmyra and the caravan routes traversing the Arabian Peninsula, and perhaps even the incense trade from Khor Rori.

III From the Gulf to the Indian Ocean

The trade exchanges between the western with the eastern portions of the Eurasian world system were conducted via land and sea. The maritime routes primarily witnessed ships leaving the ports of the Red Sea in July to take advantage of the monsoon winds, and the first landfall of the trading ships would be the western coast of India (Casson 1989: 75, 81, 85). Pliny (1961-68) has indicated that the return voyage would then take advantage of the northeast monsoon in December or January. According to the *Periplus*, usually such voyages took approximately twenty days (Casson 1989: 289). Though others have suggested a much longer duration lasting around two to three months because of the rough seas (Sidebotham 2011). Sailing south from the Red Sea ports, Muza, Okélis, and Eudaimôn Arabia are the first ports and landfall that appeared on the sailing horizon on the south Arabian coast. Okélis was the first stop on the way to the western coast of India, and a place to wait for the monsoon wind to facilitate the sailing into the Gulf of Aden and across the Indian Ocean. Eudaimôn Arabia located further eastward was a mart where the ships sailing from India and Egypt rendezvous, though its importance receded after the conquest of Egypt by the Romans. Muza has been noted to be busy in the *Periplus*, as it had a trade linkage with the Indian port of Barygaza, and also with the northeastern African coast. From textiles to wine and grain such as wheat were actively traded in this southern Arabian mart.

On the northwestern coast of India, two ports according to *Periplus*, Barbaricon and Barygaza were trade marts where wine, glass, metals textiles, gold coins, and frankincense from western part of the Eurasian world system in particular from Egypt and the Arabian peninsula were exchanged for precious stones, ivory, cotton cloth, perfumes and silk from India, Central Asia, Southeast Asia and China (Casson 1989: 75, 81). At Barbaricon, the goods from Central Asia and China via caravans from Afghanistan, and shipborne products from Southeast Asia and China were exchanged for items from the West. Another center of trade after the port of Barbaricon was Barygaza, one of the most important ports of the Monsoon trade.

Further down the western coast of India lay the port of Muziris, which according to the *Periplus*, presumably had a Roman merchant colony (Casson, 1989:85). Besides Muziris, another port Nelkynda where Roman ships would pick up the goods shipped from the eastern coast of India, primarily from Arikamedu located on the southeastern coast of India. The latter port, Arikamedu had contacts with the Mediterranean from the 1st century BC onwards and the peak period of activity lasted until first century AD (Will 1991). Besides the forwarding of goods from the southeastern coast of India to the southwestern and western coast of India, there was also the utilization of land transportation from the southeastern part to the western ports of India. Finds of Roman coins along these land routes attest to the use of this form of transportation.

Politically, the Andhra rulers controlled much of the western and eastern parts of India starting from Barbaricon on the Indus during this time period. In southern India, three Tamil states were also of political consequence. The Chera state which ruled the seacoast from Calicut to Cape Comorin where the marts of Muziris and Nelcynda were the main attraction for the Roman traders especially the pepper trade. Muziris was the main trading port for the Roman ships. Gold was exchanged for the pepper grown in the nearby hills and the interior. In the south and southeast by the north coast of the Gulf of Manaar to the Palk Strait is under the control of the Kingdom of Pandya where the export concentrated on pearls and pepper. Its main port is Nelcynda located inland along the Pambiyar River. The large Roman ships would moor in its estuary near Becare, whereby the cargoes from Nelcynda would be transported and loaded on them for the return trip to the Red Sea and beyond. Along the eastern coast of India from the Veliyar to Nellore is the Chola kingdom specializing in muslin as its primary export. For the latter, trading goods from Sri Lanka were also parts of the array of items for exchange. The Chola Kingdom had three commercial ports on the eastern coast: Puhar, Poduke, and Sopatma. They serviced trading ships from Roman Egypt, Indian merchant ships plying the eastern coast of southern India, and ships that sail to Southeast Asia bearing goods from Roman Egypt, and India.

Within these trading complexes of south India was the island of Sri Lanka. Sri Lanka known to the Romans and Greeks as Taprobanê was also a source for spices and other products, though the island might not be the only place of cultivation. Taprobanê exported spices and other products to the South Asian ports for onward transfer to the Gulf and Red Sea ports, and finally to Roman Egypt. Some of these products most likely came also from Southeast Asia, especially from the various islands of Indonesia and the Malayan archipelago. The evidence of deposits of Roman coins excavated provided the confirmation of this trade and most of the coin deposits were those of the fourth century AD (Young 2001). It has also been known that by the time Ptolemy was compiling his geography, Roman ships were already making ocean trips from the Gulf of Aden to Taprobanê (McLaughlin 2010). Bopearachchi (2011), however, suggested that the Greco-Roman merchant ships never sailed as far as Sri Lanka because they had to take advantage of the monsoon winds for the voyage to India in July from the Red Sea, and thus reaching the Indian ports by September/October with the return journey to be taken in November to take advantage of the northeast Monsoon. Such timing meant that the Roman merchants had only a month to exchange their wares in South Asia, and this was not considered to be enough time by Bopearachchi (2011). Thus, it was the Indians in an intermediary role, and Sri Lankan merchants who transported their goods to southern Indian ports and marts for the exchange of goods with the Greco-Romans. Such reasoning of Bopearachchi's might be an explanation based on the limited finds of Roman coins, but the idea of Greco-Roman ships reaching Sri Lanka and eastwards should not be jettisoned without careful consideration. There have been numerous literary sources indicating of foreign merchant colonies being established in South Asia, East Africa, Island Southeast Asia, and southern China whereby foreign merchants spent a period of sojourn among the littoral communities of the Eurasian world system waiting for the monsoon winds to change so that they can continue their onward or return voyages.

Further east from Sri Lanka is Southeast Asia. Roman trade contacts were initiated after voyages by Roman ships passed Sri Lanka and sailed into the Bay of Bengal and the region where the River Ganges flowed. During the time of Ptolemy, Roman ships from the Ganges had reached the Burmese coast from Paloura, India that was the launching point for ships to Burma (McLaughlin 2010). Indian sailors seeking commodities such as gold, diamond, sandalwood, and cinnamon from Southeast Asia had reached the route to Burma. McLaughlin (2010:58-59) has determined that Roman ships explored beyond the Malay peninsula a few decades after AD139 reaching Vietnam looking for supplies of rhinoceros horns, pearls, ivory, and fragrant woods. To the Chinese, Rome was known as Ta-Ch'in in *Hou-Han-shu* (Leslie and Gardiner 1996). According to *Hou-Han-shu*, Rome was interested in pursuing economic and political relations with Han China. To this effect, the Chinese document *Wei-Lü* provided a detailed account of the Roman products that were imported into China (Leslie and Gardiner 1996). According

to Chinese sources, an official delegation from Rome to China arrived in the Middle Kingdom around AD166. McLaughlin (2010) has also stated that by AD 166, Roman subjects reached China during the Han Dynasty sailing from Southeast Asia. Whether these Romans belonged to the same delegation or were of different delegation dispatched to the Chinese court is not clear. What is clear is that from the Antonine period onwards, during the Dark Age of collapse, Roman trade with the East tapered down as reflected by the coin hordes discovered in India and a sharp decline in trade of the Red Sea ports.

IV From the Indian Ocean to the South China Sea

As much as the Roman and Indian ships sailed eastwards towards Southeast Asia and China, ships from Southeast Asia were also sailing westwards towards India, Sri Lanka, and the East African coast. Notwithstanding maritime trade, the land trade routes radiating from the eastern Mediterranean towards Central Asia, India, Southeast Asia and China were also utilized as well to conduct trading exchange of the Eurasian world economy. From South Asia eastwards, the maritime silk routes also depended on the timing of the monsoons to sail to Southeast Asia, China, and other parts of East Asia. Same as the pattern of sailing from the Red Sea to northwestern India, the ships from the Indian Ocean sailing to Southeast Asia would also take advantage of the Northeast or Southwest monsoon depending on the directions of sailing eastwards or the return journey westwards. Periods of sojourn would be taken by the merchants and sailors in different parts of Southeast Asia – in particular, the landfall on the Malayan Peninsula – and Southern China while waiting for the wind directions to change depending on the sailing direction.

Various timings have been pinpointed of trade connections between the East and the West of the Eurasian world system. According to Kennedy (1898) and Tibetts (1956), trading connections between Mesopotamia and China existed as early as the seventh century BC, and Glover (1996) noted of exchanges between mainland Southeast Asia and India between 360-390 BC. Within Asia, localized exchange networks in Indonesia and the Malayan peninsula were existent from the second millennium BC (Glover 1979, 1996; Chew 2001, 2007). Southeast Asian merchants and trading communities were already participating in the trading world by 1000 BC, and had substantial commercial contacts with India and Madagascar by the second part of the first millennium BC (Leong 1990: 20-21; Christie 1990; Hall 1985; Taylor 1976). Archaeological excavations have indicated that perhaps as early as 500 BC, the polities in the Malay Peninsula were already participating in regional trading networks.² Wang (1998: 13) however stated that Chinese trade with India started much later towards the end of the first millennium BC – the second half of the first century BC.

In East Asia, intraregional trade routes were established by the 5th century BC (Sarabia 2004, Higham 2002, Hung and Bellwood 2010). Mostly they centered on products such as silk and ceramic wares. Within East Asia, Chinese goods were exchanged by land to the Korean peninsula and via shipping to the Japanese islands. Imamura (1996) and Sarabia (2004) have traced the exchange between China and Japan in the archaeological bronze finds unearthed in Japan that had northern Chinese origins. There were raw materials exchange between Taiwan and Southeast Asia, and nephrites of Taiwanese origin have been excavated in southern Thailand, the Philippines and other parts of insular Southeast Asia (Hung and Bellwood 2010).

Given the above different periodisations, within the Asian region, we can assume that trade occurred between China and the ports on the Indian Ocean by at least the second half of the first century BC when following unification of China in 221 BC, the Chinese pursued expansions to the south (Wang 1958:21). Wheatley (1959:19) reported of Chinese envoys being sent by the Han emperor Wu (141-87 BC) to explore the South Seas as far as the Bay of Bengal. The establishment of commanderies in the south helped to

² For example, the discovery of the Dong Son drums in the eastern part of the Malayan peninsula similar to those of the earlier Dong Son culture located in the Red River Delta of Vietnam is indicative of how much distance these drums have travelled (Jacq-Hergoualc'h 2002, O'Reilly 2007).

facilitate and establish trade exchanges (Wang 1998). Evidence of Chinese trade in Southeast Asia has been revealed in recent excavations in southern Thailand of the Malayan peninsula (Murillo-Barroso et al 2010). With these different timings of trading connections between the eastern and western zones of the Eurasian world system, it would be safe to assume that the connection of Southeast Asia and East Asia with the eastern Mediterranean can be noted as from the era of the Chin dynasty (around 221 BC) onwards.

The various seas and straits in Southeast Asia and East Asia circumscribed the trading connections conducted in the eastern zone of the Eurasian world economy. Like the land (silk) routes that linked the west with the east, the Bay of Bengal, the Andaman Sea, the Straits of Malacca, Java Sea, Makassar Strait, Molucca Sea, Celebes Sea, South China Sea, East China Sea, Yellow Sea, and the Sea of Japan became marine routes linking the East with the West. The two major seas of importance in these maritime routes between East and West were, of course, the Indian Ocean and the South China Sea. Regionally, the Straits of Malacca and the South China Sea were of particular significance for they bordered the major land areas of Southeast Asia and East Asia whereby the global trade was conducted. Networks of local and regional trading ports and centers existed from 200 BC onwards or perhaps even earlier, and from these local and regional networks the trading was linked to the trans Eurasian maritime routes of the global system from the East China Sea to the Mediterranean.

From the Roman Mediterranean through to India, merchants utilized the above shipping routes from the Indian Ocean, the Bay of Bengal and the Andaman Sea to mainland and island Southeast Asia seeking products that Southeast Asia had abundant supply. The reverse occurred as well. Those sailing east had pepper, aromatics, cloves, various food items, marine products, exotic feathers, and pearls on their trading orders (see for ex., Hoogervorst 2013, Hall 2011, Wang 1958, Manguin 2004)). Usually for shipping from India and Sri Lanka, the port call would be the Isthmus of Kra nearby to Peninsula Malaya whereby goods were then transferred by land portage across the Isthmus to eastern Malay Peninsula ports and kingdoms located on the western edge of the Mekong Delta such as Funan. From Funan, ships would call on Pan Pan located on the eastern part of the Isthmus of Kra, Linyi and Chiao-chih located in Vietnam and Hepu and Xuwen on the Gulf of Tonking (Borell 2013; Glover 1990). Sailing along the Straits of Malacca and avoiding the land portage across the Isthmus of Kra would only take place from the fourth century AD onwards. Taking advantage of the Monsoon winds, depending on the sailing directions, the winds would power the ships towards the East or West towards India and onwards. Sailing east, ships from Southeast Asia would reach ports in southern China such as Guangzhou (Borell 2013), and in turn, Chinese ships would reach the ports on mainland Southeast Asia and eastern Malay Peninsula.

Further south of the Peninsula Malaya are the islands of Indonesia where a regional networks of export centers provided the aromatic woods and spices that symbolize the Southeast Asian trade. The Sunda Straits and the Java Sea were the main shipping routes where the products from Sumatra, Java, Borneo and the Celebes would be collected at regional centers such as Koying located in southern Sumatra, and from Koying to Funan on mainland Southeast Asia.

Various polities and ports dotted mainland Southeast Asia and Peninsula and Island Southeast Asia. Funan, located on mainland Southeast Asia, was a center not only for the trans Eurasian maritime routes it was also a collection point for the intraregional trade that flowed from island Southeast Asia. According to Chinese sources, it was quite developed economically and politically by the second century AD. Its stage of development even afforded it to send a fleet to take control of some of the smaller polities located in Thailand and eastern Malaya (Manguin 2009; Hall 2011). This was to change by the fifth century as the products from island Southeast Asia started to bypass Funan and the ports on the east coast of the Malay Peninsula with direct sailing from Koying and other collection centers in Borneo and Indonesia to the ports of southern China. Prior to its decline (from the mid-fifth century onwards) as a main trading center for the Southeast Asia, Funan had developed as an urban center

with shipbuilding facilities (Manguin 2009; Hall 2011). Founded according to Chinese sources around the first century AD, Funan had walled cities, palaces, storehouses, port facilities, and even hostels for visiting foreign merchants. Its capital had a moat surrounding it and a six-kilometer long wall. It had an established agricultural economy as well. The latter was developed further when the regional trade of Southeast Asia and those coming from India and Sri Lanka started to bypass Funan on their way to the trading ports of southern China.

V Trading Volume, Goods, and Bullion

It is clear that by the dawn of the new millennia (AD 1) the Eurasian world economy had expanded and grew linking different regions, cultures, and socioeconomic complexes at different levels of socioeconomic transformations. The wide variety of merchandises including foodstuffs traded, depending on the consumption patterns of different cultural lifestyles, reflect similar structures and patterns that we experience today though in the past it was of a lesser volume and pace. Within the boundaries of this Eurasian world system were core centers that were more urbanized, more economically developed, and more militarily powerful. These core centers represented the three major civilizations of the Mediterranean, the Indic, and the Sinic. Unlike today whereby we have bountiful information of global trade and volume, two thousand years ago there were no systematic recording of such trading levels. The only information that we can get a feel of the scale of the trade of the system is by examining the import taxes collected by the Romans at entry points whereby ships ferrying merchandise from the East (China, Southeast Asia, South Asia, Arabia) and Africa enter the Red Sea ports and the urban centers located on the Silk Roads of the Roman Empire. The volume of the trade has not been fully documented, and what we know are estimates from projections. Using the taxes collected on goods from the East including East Africa transported on the maritime routes we can obtain an estimate of the scale of the globalized trading volume.

As we have seen, the scale and variety of merchandises that were exchanged between the West and the East including East Africa were diverse. McLaughlin (2014: 88) citing from a Roman legal text gives us a breadth of the goods traded that taxes were paid: aromatics, spices, cotton cloths, animal hides, precious stones, silk, Indian rugs, Indian eunuchs, lions, animals, purple dye, African wool, Ivory, Indian hair, etc. Exports from Rome included wine, precious stones, shells, flax clothing, colored glassware, gold and silver coins. Just like the current global economy, there was balance of payment issues that one core (Rome) center experienced with the East that has been historically revealed. Scholars such as Miller (1969), Hopkins (1988), and Warmington (1923), have noted that there was an adverse balance of payment between the Roman Empire and the East in its trading exchanges.

According to Pliny, the amount of funds transferred to India to pay for the imports were about 50 million *sestertii* (Young 2001, Warmington 1923). This amount might not reflect the total adverse balance as Warmington (1923) has argued that the accumulation of wealth by notable Romans such as Seneca was about 300,000,000 *sestertii*. The total amount to pay for the imports from India, China and Arabia according to Pliny was 100 million *sestertii*. If the point made by Warmington (1923) holds, then this amount for three countries would have to be more than this. In spite of the differences in balance of payments, such volumes would also suggest that huge profits were to be made (Tchernia 1997).

In view of these estimates, the issue of an adverse balance of trade between Rome and the East must have been greater. We can also surmise the size of the imbalance by looking at the volume of trade between Rome and India. Sidebotham (2011) has provided an estimate for the cost of each cargo that a 75-ton capacity Roman merchant vessel carried in the 1st century AD between India and Rome. A vessel of this capacity can potentially carry up to 147 million drachmas worth of cargo. A Greek document,

Muziris Papyrus that dated back to the second century AD, has revealed another set of figures for a Roman ship involved in the Indian Ocean trade. It showed the Roman vessel carried over 220 tons of Indian merchandise (McLaughlin 2014: 89). When the cargo was removed from the ship so that taxes can be levied the cargo was worth the equivalent of nearly 7 million sesterces. McLaughlin (2014: 94) has suggested that in addition to the cargo carried on the ship, *Hermopolis*, there were also lightweight preciousnesses such as pearls, gemstones and silk. With this, the total cargo would probably amount to 10 million sesterces. Scaling up from a single ship as noted in the *Muziris Papyrus*, to the estimated 120 ships that ply the Indian trade with Roman Egypt, the scale and type of goods exchanged per annum were: 16,000 tons of pepper and cotton (556 million sesterces), 10,000 tons of malabathrum and other spices (158 million sesterces), 7,000 boxes or 50 tons of nard (32 million sesterces), 360 tons of turtle shell (18 million sesterces) and 576 tons of ivory (over 14,000 tusks costing 60 million sesterces) (McLaughlin 2014: 93). Given Strabo's figure that about 120 ships are involved in the Roman-Indian trade each year, a total of 17.64 billion drachmas were estimated to be involved in this trading exchange (Sidebotham 2011, McLaughlin 2014). This is equivalent to 17.64 billion *sestertii*. If this is the estimated volume of trade transacted, then the 50-million *sestertii* amount for the adverse balance of trade Rome suffered must be underestimated. In terms of scale of the adverse balance of payment, one can obtain a feel of this at the level of the Romans by noting that a Roman legionary is paid 4 *sestertii* for one and the half days of pay, and a skilled workman in Roman Egypt had a monthly salary of 25 *sestertii*.

Viewing this in another way by the size of shipping required for transport of Indian and Eastern goods to the Roman Empire, this adverse balance is reflected in the size of shipping required for the Roman-Indian trade. Larger vessels were required to carry the voluminous goods from India in comparison to the smaller size ones for the transport of goods to India and the East from the Roman Empire (Warmington 1928, Casson 1989). In this regard, in order to balance (pay) the exchange of voluminous products from India to the Roman Empire and the smaller volume from Rome to India, precious metals such as gold and silver made up the difference in the balance of trade.

The Maritime Global World

Given the above, a globalizing world economy was in the making from the late prehistoric period that extended from the West to the East incorporating civilizations, kingdoms, and the various oceans and seas. A global division of labor existed incorporating various regions in trading exchanges throughout the Mediterranean Sea, the Red Sea, the Persian Gulf, the Indian Ocean and the South China Sea. It was a maritime world of seas and oceans connecting the various lands resulting in cultural and technological transmissions and hybridizations, notwithstanding the conflicts and wars that erupted from time to time. Expansion of the world economy was by no means unending, for at various long historical periods there were punctuations of socioeconomic downturns, the origins and factors for these contractions were not discussed in this chapter but were attempted elsewhere (see for ex., Chew 2007, Chew and Sarabia 2016). Despite some of these fluctuations, the Eurasian world economy continued on its globalizing trajectory to this day whereby every ocean has now been incorporated, with the exception of the Arctic Ocean.

Sing C. Chew is Senior Research Scientist at Helmholtz Centre for Environmental Research-UFZ, Leipzig, Germany, and Emeritus Professor of Sociology, Humboldt State University. He is the founding Editor of the interdisciplinary journal, *Nature + Culture*, and is the author of a trilogy on world ecological degradation over five thousand years of world history: *World Ecological Degradation: Accumulation, Urbanization, and Deforestation 3000 BC – AD 2000 Vol. 1; The Recurring Dark Ages: Ecological Stress, Climate Changes and System Transformation Vol. 2; Ecological Futures: What History Can Teach Us Vol. 3*. His most recent book is *The Theory and Methodology of World Development*.

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A Tradition of Large Logboats on the Save River, South-Eastern Zimbabwe?

Rosanne Hawarden

Department of History, University of Canterbury, Christchurch, New Zealand
P O Box 29-251, Riccarton, Christchurch, 8440, New Zealand
Email: rosanne@computer-nz.com

Abstract

A tradition of large logboats has not previously been documented in south-eastern Zimbabwe. Large logboats called *almadias* by Portuguese explorers, are known from the Zambezi River as depicted in an 1859 painting by Thomas Baines. A 100+ year old, nine metre logboat found near the confluence of the Runde and Save Rivers, Gonarezhou National Park, is probably the last example of a similar tradition. The transport of twentieth-century migrants and mine recruits from Mozambique would have created a demand for logboats. These rivers are of interest as a route from medieval Great Zimbabwe to Sofala which linked into the trade networks of the Maritime Silk Road.

Key words: Logboat, dugout canoes, Thomas Baines, Save River Zimbabwe, Sofala.

Introduction

In 1959 the Rhodesian archaeologist, Roger Summers (1960, 1969) reported the existence of an 'ancient dhow harbour or dock' at the confluence of the Runde and Save Rivers (also historically referred to as the Lundi and Sabi Rivers) located on Zimbabwe's south-eastern border with Mozambique, flanking the Gonarezhou National Reserve (Figures 1a, b and c). The dock or riverine harbour was a roughly rectangular stretch of water, 250 yards long by 40 yards wide (229 X 37 metres) cut off from the river but connected by a dry watercourse to the Runde River about a quarter of a mile (0.4 km) before it joined the Save River. After several visits he came to the conclusion that 'the place showed evidence of human workmanship' and had been excavated to provide 'a place in which small ships could moor off the river' but the presence of hippopotamus and crocodile prevented further investigation (Summers, 1969: 208). No construction details or evidence for wooden structures were given. These rivers are thought to be one of the routes from medieval Great Zimbabwe to Sofala and the Indian Ocean (Beach, 1980: 40; Chirikure & Pikirayi, 2008; Huffman, 1972; Mitchell, 2002: 328-329; Summers, 1969: 208). In 1891 the first European expedition by James Theodore and Mabel Bent travelled along the upper Save (Sabi) River and similarly concluded that it was a 'magnificent stream even here so far inland' and in 'ancient times it must have been navigable for larger craft, for all African rivers are silting up' (Bent, 1892: 231). They were the first to conclude that the ancient builders of the ruins of Mashonaland 'utilised this stream as their road to and from the coast'. While investigating early mining in the area, Summers (1969: 206-207) collected oral history from local African sources and Europeans who related stories of connections to Arab navigation from the East African/Swahili trade. He concluded from examining the geography and analysing maps that the Save River was the first river outlet from the ancient Zimbabwean gold-fields and that the route via the Zambezi River was a later development (Figure 1a).

The Dock at the Runde and Save Rivers

The remote location of the dock at the Runde/Save River confluence and the resident population of aggressive game have made locating this riverine harbour difficult but the reported presence of a riverine harbour needs to be brought to the attention of future researchers in the area. A well-

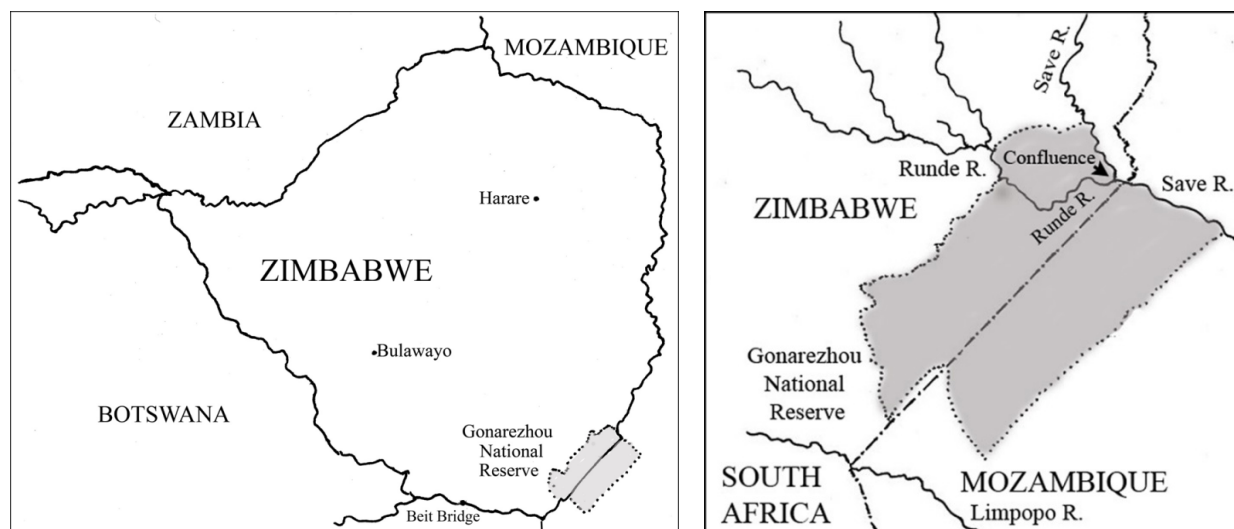
equipped expedition during the low water season is required to achieve this. Almost nothing is known of the watercraft that plied these rivers although evidence, both archaeological and ethnographic, for the use of logboats is found in every temperate region as well as in many tropical areas (Gould, 2000: 97; Johnstone and McGrail, 1980). Dugouts gave way to skin boats in the higher latitudes with the exception of New Zealand and north-western America both noted for their 'plentiful supply of extremely large trees' (Johnstone and McGrail, 1980: 46). However, in April 2013 on a field trip to the locality of the dock the author was told of a 'dugout canoe' near the village of Mahenye. On inspection this proved to be a large unfinished logboat or *mukhumbi* reportedly over a 100 years old, made by local Shangaan residents (Saunders, 2006: 266). The existence of this canoe whose construction the local informant, Aleck Simbini, insisted dated to 1910, was apparently not known to former colonial administrators, white farmers and landowners (personal communication with John Laing, Thomas Mutombeni, Colin Saunders, Mark Saunders, Clive Stockil, and Darryl Plowes 10 January, 2014). In the short time available it was not possible to investigate this oral history further but the relationship of trust between the informant and his employer permitted the visit to this revered site, during which the appropriate respect and decorum was observed. The nine metre long canoe is likely to be one of the few remaining examples of an undocumented tradition of large trading or travelling canoes on south-eastern Zimbabwean waterways. The term 'dugout' is used interchangeably with 'logboat' as this is the term used in this region for these canoes and is used in the literature, for example Greenhill's (1976) fourth root of boatbuilding is the dugout and McGrail's (2015) discussion of the origin of planked boats from dugouts or bark boats. This article serves to alert future researchers of the possibility of an indigenous canoe tradition leading to the finding of other examples along the extent of the Save River.

Historically large logboats are recorded on the Zambezi River where they were called *almadias* by sixteenth-century Portuguese explorers and traders (Duarte, 2012: 8; Newitt, 1995: 7-12; Pearson, 1998: 38). They are also mentioned and illustrated in the books of nineteenth-century explorers such as Henry Morgan Stanley, as well as recorded in the paintings of Thomas Baines from the Livingstone expedition (Stanley, 1878; Tabler, 1982). Smaller dugout boats were still being used for daily transport and fishing needs in the late 1950's prior to the construction of the Kariba Dam (see Figures 5 and 6) from the Plowes photographs of the Batonga people. Small bark boats are still reported to be constructed for transport and fishing purposes on the Runde and Save Rivers.

The unfinished canoe's construction shows a high level of skill and watercraft knowledge, testifying to a possible tradition of large trading or travelling canoes in this area of Zimbabwe. The existence of a dock or riverine harbour on these rivers indicates that the volume of the canoe traffic was extensive enough to require the alteration of river banks and the construction of land based structures to facilitate this trade. Summers (1969: 208) suggested that the dock at the Runde/Save River confluence was made by medieval Arab or overseas traders travelling from the coast to engage in trade with the people of the Great Zimbabwe culture in a period when water levels were higher due to heavier and more consistent rainfall. He gives no evidence supporting his contention that these were dhows or boats of foreign construction. Summers (1963: 28) describes the myths and controversy around the building of Great Zimbabwe which ascribed it to high antiquity and a South Arabian origin but found that archaeological evidence increasingly pointed to the builders being Africans, ancestors of the Shona people. Summers (1963: 105) further concluded that the importation of beads and other exotic artefacts of Indian origin found in ancient mine workings pointed indisputably to contact with the coast. He asserted that this was most likely to have been an Arabian carrying trade until displaced by the Portuguese in East Africa in the sixteenth century but gives no supporting evidence. If the merchants were of Arabian origin, based in East Africa, it seems reasonable for Summers concluding that their ships were dhows, particularly if this was a myth held by other Europeans in the area. Summers (1969: 202) discussed in some detail the difficulty in navigating against the strong southerly currents in the Mozambique Channel between the African coast and Madagascar. He showed that a seasonal route from Nova Mambone at the mouth



FIGURE 1A. MAP SHOWING RIVERS AND PLACES IN ZIMBABWE AND MOZAMBIQUE MENTIONED IN THE TEXT. INSET MAP OF AFRICA AND MADAGASCAR.



FIGURES 1B AND 1C. MAP OF ZIMBABWE AND LOCATION OF RUNDE AND SAVE RIVERS IN THE GONAREZHOU NATIONAL RESERVE. -.- INDICATES THE INTERNATIONAL BORDER. THE GONAREZHOU NATIONAL PARK AREA IN GREY.

of the Save River to Sofala at the mouth of the Buzi River, and thence to entrepôts on the East African coast could have existed despite the variable winds in this region below the monsoon belt. This route necessitated crossing over to the west Madagascan coast to catch the weak northerly counter-current and knowledge of this route would have been secret, known only to 'Kilwan merchant sailors', who dominated the East African trade for centuries. Summers (1969) does not consider the possibility that a community of African or Madagascan maritime traders could have participated in this trade. Knowledge of this route is of interest when assessing the southward limits of the Indian Ocean trade.

There is, however, evidence for more recent African travellers on this river requiring the dock to be maintained and the canoe building tradition to continue into the twentieth century, servicing the transport needs of migrant workers and mine recruits travelling between Zimbabwe, Mozambique and South Africa (Vail, 1989). The Save River was a route used by these migrants who congregated at the now demolished village of Marumbheni or Marumbene in the Gonarezhou National Park, the base for many years for official and unofficial labour recruiting agents (Saunders, 2006: 63-76). Historically during the wetter periods of the year the higher water level would have allowed travel by large logboats from the Runde/Save River confluence to and from villages along the Save River in Mozambique. The author postulates that the dock near Marumbheni may have been re-used in the early twentieth century to store and protect large travelling canoes servicing the seasonal migrant trade or when the Save River was in flood following high seasonal rainfall on the interior plateau or from periodic landfall by tropical cyclones. A small local industry of expert craftsmen and carpenters could have continued a historic tradition of building and trading large travelling canoes because the riverine forest at this time contained big trees suitable for large canoe manufacture. Silting of the Runde and Save Rivers and extensive removal of riverine forest in the 1950s for tsetse fly control has made the modern production and use of such large canoes unfeasible (Saunders, 2006: 368). Modern parallels can be found in the trade of logboats in the Mosquito region of Central America and Northwest Canada (Brown, 2005: 82; McSweeney, 2004).

Geographic and Climatic Considerations

Understanding the geography and climate of Zimbabwe which lies between latitudes 15°S and 22°S and longitudes 25°E and 33°E, will determine the parameters of an indigenous canoe trade. The central plateau lying 1000m to 1500m above mean sea-level, is the defining topographical feature. The altitude decreases northward towards the Zambezi River Valley and southward towards the Limpopo River with a chain of mountains along the eastern border with Mozambique, whose peaks reach heights of 2300m to 2500m. The north-eastern areas receive the highest rainfall with a mean annual precipitation between 1950 and 1980 of about 800 mm. The southern areas are semi-arid with mean annual precipitation below 400 mm. A defined rainy season spans the months October through to April, with December, January and February being the peak precipitation months (Unganai, 1996). The Gonarezhou National Park extends over 5053 km² with a mean annual rainfall of 466 mm, which is highly variable. The vegetation is typically of the semi-arid *Colophospermum mopane* zone and is predominantly dry deciduous savannah woodland except for the riparian areas (Zisadza-Gandiwa et al, 2013). Here the vegetation includes baobab (*Adansonia digitata*), fever trees (*Acacia xanthophloea*), mulala palms (*Hyphaene natalensis*) and tangles of thorny Wag 'n Bietjie (*Asparagus* sp.) (Saunders, 2006: 30; Summers, 1969: 207). Other predominant large riparian tree species include red mahogany (*Khaya anthotheca*), pod mahogany (*Azelia quanzensis*), ironwoods (*Androstachys johnsonii*), and Lebombo wattle (*Newtonia hildebrandtii*).

A number of small pools form when the floodwaters of the two rivers mingle in the rainy season (Matiza, 1994). The seasonal flood water has two sources, annual rainfall in the interior plateau and sporadic cyclones, such as the 2003 Cyclone TC19S Japhet, which develop in the Mozambique Channel bringing extensive rain into the Save River basin (Furze, 2003). The flow regime of the Runde River is characteristic of semi-arid watercourses with extremes of discharge occurring with the high summer

flood flows exceeding 100 cumecs (Tafangenyasha and Dzinomwa, 2005). Rainfall recording commenced in the mid 1930's and very little investigation has been done into the prehistoric climate of Zimbabwe (Ebi et al, 2005; Unganai, 1996). The impact of future climate change on Zimbabwe has resulted in some recent research but this has focused on monitoring water quality, changes to food supplies and epidemiology (Tafangenyasha and Dzinomwa, 2005). Given the challenges facing the conservation of medieval monuments such as Great Zimbabwe, research into the medieval climate of Zimbabwe and the state of navigable rivers would not have a high priority (Ndoro, 1994).

Location Of The Logboat At Mahenye

Acting on local reports the author accompanied by John Laing and the informant, Aleck Simbini, visited the site of the canoe on 25th April, 2013, after travelling on rough bush tracks and a ten minute walk through dense, pathless thorny bush. The location of the canoe was noted by G.P.S. at 21°17'9.70"S 32°25'24.10"E. To facilitate future relocation and investigation the recorded bush track is shown as a white line or way path to and from Chilo Gorge Lodge to the canoe site in Figure 2. This is superimposed on the Google satellite image of the terrain. The canoe site is indicated with a star and the current Runde/Save River junction marked with an arrow. The triangle is the site of Mahenye village and the square the former site of Marumbheni village. These site markings are approximate given the map scale. White lines are the international borders. The site is in secondary riverine growth approximately 0.75km from the first dried up stream bed and one kilometre from the second larger dried up stream bed. The canoe is currently three kilometers from the current river channel. Aleck Simbini is also the source of the local name, *mukhumbi*, writing out at the author's request the name used in the district for a logboat.



FIGURE 2. GOOGLE EARTH SATELLITE IMAGE SHOWING THE LOCATION OF THE CANOE (STAR) ON THE SAVE RIVER, WITH THE WHITE LINES INDICATING BUSH TRACKS FROM CHILO GORGE LODGE. THE TRIANGLE IS MAHENYE VILLAGE AND THE SQUARE WAS THE SITE OF MARUMBHENI, NOW DEMOLISHED. THE ARROW IS THE REPORTED SITE OF THE DOCK. WHITE LINES WITH BARS ARE THE INTERNATIONAL BORDERS.

Possible Historical Antecedents

The earliest known references to large logboats called *almadias*, were made by sixteenth-century Portuguese explorers and traders accessing the Zambezi River from Quelimane at the delta mouth via the two 'inland port cities' of Sena and Tete both of which were established to conduct trade on the river. These canoes could hold considerable amounts of cargo, estimated to reach 20 tons or up to 12,500 pieces of cloth per boat in the largest canoes (Newitt, 1995: 7; Pearson, 1998: 40). Muslim traders from Sofala and Chiluané conducted an independent trade along the Save River from the old settlement of Mambone at its mouth with the inland Karanga states of Butua and Maungwe in the seventeenth century. In the early eighteenth century a *prazo* or a leased crown estate at Mambone was registered by Sofala merchants, maintaining an isolated outpost of Afro-Portuguese culture and economic activity (Newitt, 1995: 10). So little is known about the watercraft used on this river but it is likely that some form of dugout canoe was made (and themselves traded) to transport goods up the Save River. Newitt (1995) points out that *almadias* were both ocean going and river craft and adapted to different aquatic environments. In the northern coastal areas as well as the Comores and Madagascar, *almadias* were fitted with outriggers whereas these were not used in the Zambezi and southern areas. Duarte (2012) confirms that *almadias* were traditional craft sailing along the Mozambique coast in association with *luzios* and *mtepe*, larger sewn plank boats now extinct on this coast. On the East African coast double outrigger canoes were known as *galawa* or *ngalawa* whereas the ordinary dugout was called *mtumbwi* (Haddon, 1918). This Swahili term for logboat may be cognate with term *mukhumbi* used by the informant.



FIGURE 3. TOWN OF TETE FROM THE NORTH SHORE OF THE ZAMBEZI BY THOMAS BAINES, APRIL 1859. OIL ON CANVAS 46 X 65.7CM. ROYAL GEOGRAPHICAL SOCIETY CATALOGUE, NO. 4.6. IMAGE NO: S0014503

The outstanding illustration of *almadias* on the Zambezi River is by the renowned English painter and member of the Livingstone exploration party, Thomas Baines. In April 1859 he painted a lively scene of river life at Tete (Figure 3). This is the only landscape painting of a river canoe in the extensive holdings of Baines work by the Royal Geographical Society, London and The Brenthurst Library, Johannesburg. This painting shows the town on the south shore in the far distance while in the foreground Africans standing on the river bank or resting in a thatched tree house, observe the river traffic. These include the expedition paddle steamer, the *Ma Robert*, and other watercraft brought by David Livingstone to Africa. Three canoes can be seen mid-river with two on the foreshore, the focal point being a large canoe on the near bank with many people embarking. The canoes appear to be poled but may also have been paddled by standing paddlers in what Livingstone called the 'Barotse fashion', the Barotse being a west Zambian tribe (Barringer, 1996: 182). This standing paddling tradition continues into current times with standing paddlers in small fishing canoes observed by the author on the upper Zambezi River.

Further evidence of the large size of these trading canoes (16m), which were twice the length of the Mahenye canoe (9m) but of a comparable width (1m) and depth (0.7m), is given in the published journal of explorer, Henry Morgan Stanley (Stanley, 1878: 369). It includes a depiction of the construction in 1877 of the new 'Livingstone' canoe on the Nzabi Creek, Congo (Figure 4). Stanley (1878) described it as follows:

...we set to work cutting down a teak-tree, and for this job selected forty men, twenty of whom were allotted to Frank for nightwork, and twenty I reserved for a day party. The tree was 13 feet 3 inches [4m] in circumference, and when prostrate we possessed a clear branchless log 55 feet [16.7m] in length. On the 22nd May the magnificent teak canoe Livingstone, perfectly complete, was launched with the aid of one hundred happy and good-humoured natives, into the Nzabi Creek, in the presence of the Nzabi chief and his three wives. In order to prove its capacity we embarked forty-six people, which only brought its gunwales within six inches of the water. Its measurements were 54 feet [16.4m] in length, 2 feet 4 inches [0.71m] deep, and 3 feet 2 inches [0.97m] wide (Stanley, 1878: 371-372).

The illustration amplifies this description in so far as it shows the workers hewing the log into shape. The tools used appear to be iron axes. In the absence of other evidence of construction methods, Stanley's testimony may be taken as indicative of the means of making the Mahenye canoe. Stanley's canoe carried about fifty people without overloading; the smaller Mahenye canoe would therefore have had a capacity of 20-25 people. Even this appears to be about double the size of the craft shown in Baines' Zambezi River painting. Stanley (1878) does not describe the shape and depth of the internal canoe compartment.

Other canoe building traditions survive in the swamps of Namibia, Botswana, Zambia and on the great lakes of Africa (Emtage, 1967; Nsiku, 2003; Purvis, 2002). Where documented these are smaller canoes associated with fisheries (Nsiku, 2003). In the flood plains of the Caprivi and Okavango the *mokoro*, a shallow poled fishing canoe from two to six metres is the favoured watercraft (Purvis, 2002: 2, 16). In Malawi the traditional dugout canoe (*wato*, *bwato*, *ngalawa*), has persisted as the dominant fishing vessel despite a shortage of suitable tree species. The Malawian canoe design with its in-curved wooden lips and a narrow aperture makes a vessel of this type difficult to turn over (Emtage, 1967). It can roll almost 90° to lie on its side and recover, shipping very little water. The cutaway stem and stern also prevents rolling.

Two unpublished photographs of the riverside life of the Batonga people on the Zambezi River taken in 1955 and 1956 by Darryl Plowes show the smaller canoes used at Milibizi (between Binga & Deka) before that area was flooded by the upper reaches of the Kariba Dam. These photographs were taken on one of two Rhodesian Schoolboy Expedition Society (RSES) trips to that area and have been cropped to

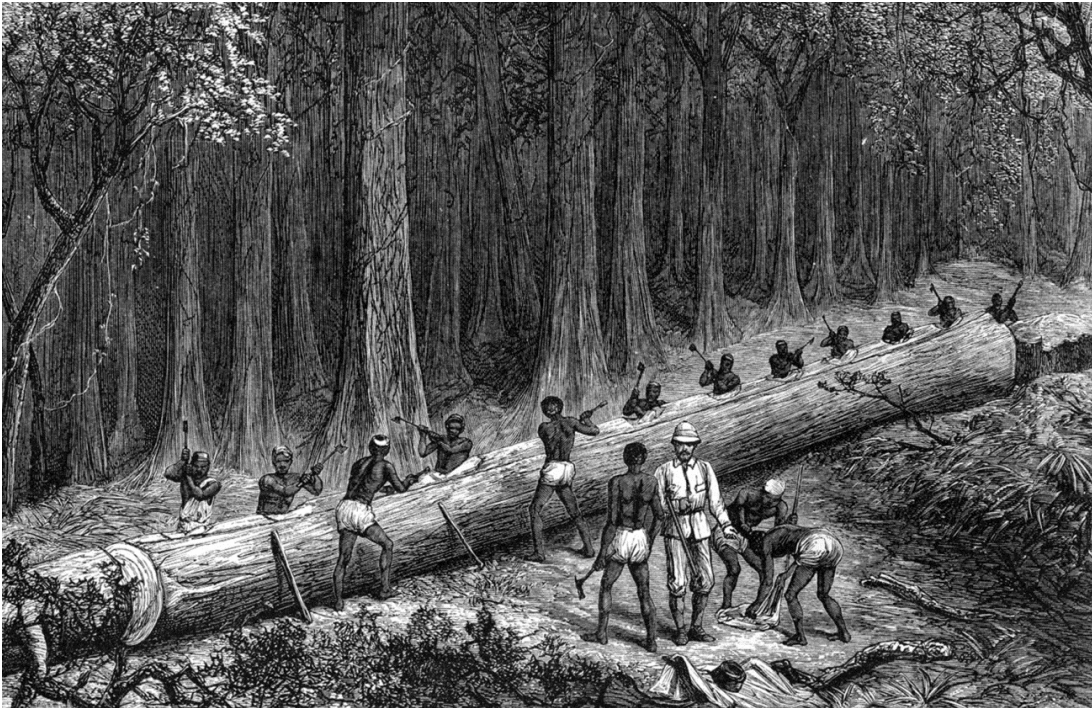


FIGURE 4. CUTTING OUT THE NEW 'LIVINGSTONE' CANOE ON THE NZABI CREEK, CONGO (STANLEY, 1878: 369).



FIGURE 5. BATONGA RIVERSIDE LIFE ON THE ZAMBEZI RIVER AT MILIBIZI. (PHOTO TAKEN BY D. PLOWES IN 1955/1956)



FIGURE 6. SHOWS A POLED BATONGA DUGOUT CANOE BY A CROCODILE PROTECTION ENCLOSURE. (PHOTO TAKEN BY D. PLOWES IN 1955/1956)

show the foreground activity in greater detail. Figure 5 shows a canoe with Batonga men, women and children engaged in a variety of riverside activities. Figure 6 shows a canoe next to a small enclosure built as a protection against crocodile attack for people to wash safely and obtain water. While the canoe contour is smooth and rounded with a steep prow, the internal compartment extends the full length of the canoe. Its width and depth cannot be accurately assessed.

Oral History Associated With The Mahenye Canoe

The informant and resident of Mahenye village, Aleck Simbini, told the author that the canoe (*mukhumbi*) had been made in 1910 by one of his ancestors, possibly a grandfather. This man was the 'son of a polygamist' who had drowned while crossing the flooded river during or just after a cyclone came through the area. He had wanted to visit or rescue his wives who lived on different sides of the river, one on the Mahenye side and the other near the village of Marumbheni which was demolished when the Gonarezhou National Park was established. His ancestor had used a hastily made marula (*Sclerocarya birrea*) bark boat which was not strong enough to handle the flooded river. His son was made a canoe large enough to rescue many people when the floods came again. For unknown reasons this was not completed and if the informant was correct with his dates, the remains of the canoe are over 100 years old. This canoe has been left where the trunk was felled, untouched and carefully protected by the local community.

State Of Preservation, Shape And Size Of The Mahenye Logboat

The Mahenye logboat was found covered in thick thorny undergrowth on dry sand which made access, measurement and photography difficult. The covering bush was disturbed as little as possible as it was apparent that it had contributed to the preservation of the canoe. Aware that she was being shown an artefact of great value to the local community, the author made the decision at the time to record only what was visible without any disturbance with a view to future research being undertaken. The diameter of the tree trunk is 1.2m and the length nine metres. The full diameter of the tree was observable as



FIGURE.7. MAHENYE CANOE PROFILE.

no silt had built up against its base. It lay about a metre from the tree stump and the rough ends of each matched one another. The end of the canoe was rough and unfinished. The assumption was made that this was the bow, while the stump end was the stern. The trunk had been skilfully hollowed out and the constant dimensions for the full length of the oblong aperture is 4.0 X 0.5m with a depth of 0.5m. This compartment occupied the top half of the log and was situated in the middle of the canoe. This is an unusual feature but may be related to the presence of rapids on the Save River, as adding additional weight to the bottom of the hull adds to stability, giving protection against 'the hard knocks of navigating rapids and scraping over gravel bars' (Edwards, 1965: 39). About two metres of tree trunk extended forward and aft of the compartment. Neither the external surface nor the ends of the trunk appeared to have been shaped with tools and the bark was visible in places. The internal compartment had a flat floor meeting the curving sides of the trunk at an acute angle as seen in the profile, Figure 7 and the photograph, Figure 8. The interior sides do not follow the curve of the exterior and are 5-7 centimetres thick at the aperture. The interior surface was smooth and there were no obvious tool marks to indicate the tool type suggesting that the makers had rubbed or sanded it to a smooth finish. There was no evidence for the use of fire to hollow out the log.

On the exterior the bark had weathered away or fused with the underlying wood. There was little evidence of insect activity. Although the canoe is well preserved, the right side is more fragile than the left side which had more protective bush covering. Figure 9 shows Aleck Simbini crouching in the canoe to demonstrate the large interior compartment.

During the onsite visit the tree used for the canoe was provisionally identified as a pod mahogany (*Afzelia quanzensis*). Pod Mahogany is distributed widely in Southern Africa from Northern KwaZulu-Natal to the Limpopo, Mozambique and Zimbabwe including the Runde/Save River confluence (Coates Palgrave, 2002: 279-280). It grows in low altitude woodland and dry forests, usually in deep sand. It is a medium to large



FIGURE 8. PHOTOGRAPH SHOWING THE STRAIGHT SLOPING SIDES OF THE INTERIOR AT AN ACUTE ANGLE TO THE FLAT FLOOR. (PHOTO TAKEN BY AUTHOR)

deep-rooted tree, growing up to 35 metres high, with a large spreading crown. Its straight trunk may be up to one metre in diameter and has a grey-green smooth bark. Its wood is known to be used for canoe making. As an alternative possibility the tree maybe from the *Albizia* genus (personal communication with John Laing April 2013). *Albizia* wood is relatively light and does not absorb water when dried, making it a preferred wood for canoe construction.

Discussion

In discussing the finding of the Mahenye canoe, five aspects are considered, namely its age, the circumstances around its construction, the lack of historic records of a canoe trade in this area of Zimbabwe, and the possible use of such craft in both a medieval and a twentieth-century trade on the Save River. Lastly its probable final form had it been completed, is discussed as other river dugout canoe traditions offer a range of shapes and profiles the dugout makers could have adopted.

Probable Age of the Mahenye Canoe

If the 1910 construction date of the oral tradition is doubted, the canoe (*mukhumbi*) certainly predates 1955 because in that year river littoral clearance along the Save River began on a large scale. The Rhodesian Department of Tsetse and Trypanosomiasis Control and Reclamation implemented a new policy in the Gonarezhou area to eliminate the preferred habitat of the tsetse-fly by clearing the banks of rivers and streams. This took place to the extent that ‘the bulldozers created a wasteland where previously tens of thousands of centuries-old trees had lined the watercourses of a shady paradise’ (Saunders, 2006: 368). The uprooted trees were left to rot, were burnt or the wood scavenged by local inhabitants. The site of the canoe is likely to have been included in this clearing process as the satellite photo of Figure 2 shows it to be within a green area of dense vegetation close to the Save River. No large trees of this size were observed in the bush on the route to the canoe or in its immediate vicinity, indicating that the riverine forest had not recovered. From the remaining stump it was possible to see that the tree concerned was hand felled, indicating that this was done prior to the clearance of the surrounding forest with heavy machinery which would have taken place around it. The canoe has been protected by the community at Mahenye as an admired object associated with former generations of Shangaan or Machangana tribesmen who occupied the area from the early nineteenth century or earlier as recounted in oral history (Saunders, 2006: 49).



FIGURE 9. ALECK SIMBINI CROUCHING IN THE CANOE DEMONSTRATING THE LARGE INTERIOR COMPARTMENT. (PHOTO TAKEN BY AUTHOR)

The oral tradition might be understood to mean that the canoe was a unique craft. However, its mode of construction and the careful hollowing of the interior compartment points to an existing technique of a higher order. The level floor and slanting sides indicates a specific tradition of large canoe making capable of carrying passengers and cargo. Indeed, in addition to the known historical river transport trade in Zimbabwe, the involvement of people and goods along and across the river has continued through to the twentieth century. Given this continuity of activity, it is reasonable to suppose that the canoe construction tradition was also continuous. It is curious therefore that no documentation of river craft has been found to testify to this continuity. The first scientific expedition to the area, the Bernard Carp Expedition, as recently as June 1950 collected natural specimens from the Save/Runde River junction and cultural objects for museum collections (Buttiker-Otto, 2008). Darryl Plowes, a member of this expedition, cannot recall the local watercraft nor found any images when he searched his photographs from this expedition. The heat, geographic and health challenges inhibited scientific and archaeological exploration which may explain why canoes this size have not been documented on these rivers (Summers, 1960: 270). The Gonarezhou area was also a source of sleeping sickness (trypanosomiasis), malaria, anthrax and tuberculosis which kept the human population low and prevented its early exploitation for farming.

As Saunders (2006) does not mention the use of canoes in the rivers of the Gonarezhou area, the conclusion is drawn that these were not a notable feature of river life while he was living and working in that part of Zimbabwe and during his chairmanship of the National Parks and Wild Life Board. He does report on the seasonal fishing traditions of the Runde and Save Rivers which favour reed traps, either cone-shaped baskets or coiled mats inserted into the river bed. Large pools were fished with communal nets in a traditional fish drive called the *saila* (Saunders, 2006: 50-55). No mention is made of canoes or boats in publications on the material culture of Zimbabwe despite the historic evidence from the Zambezi River (Chirikure & Pikirayi, 2008; Ellert, 1984). The Zambezi is a perennially flowing river and some form of watercraft was required to cross it, as the Batonga photographs attest. As the 1859 Thomas Baines painting (Figure 3) of the river traffic at Tete illustrates, many large canoes plied its waters. Canoes may have been so commonplace given that the iron tools used to create them were manufactured and traded by indigenous communities prior to European arrival, they are not mentioned in the writings of the time by European explorers, hunters, missionaries or later researchers interested in the cultures of resident tribes (Selous, 1881).

Circumstances leading to historic and modern canoe construction near the Save and Runde confluence

The confluence of the Runde and Save Rivers appears to be a natural terminus for river travel. Inland rapids and cataracts on both rivers not far upstream from the junction prevent easy travel by boat (Summers, 1969: 208). For this reason the site on the Runde River above the confluence is an obvious place for port facilities servicing the Zimbabwe hinterland. The Save River is open to the Indian Ocean some 300 kilometres away and the altitude drops a mere 100 to 120 metres along this course to the river mouth. Estuarine fish and turtles are still found at the confluence attracted by the higher salinity of the water due to salts leaching from the soil. Nineteenth-century traders and explorers following local routes through the bush were drawn to the confluence where a small settlement developed at Marumbheni. As a remote area this region also served as a refuge for fugitives from justice who took advantage of the nearby international border to cross unofficially when necessary (Bulpin, 2011). Marumbheni became the base for hunters, prospectors and unofficial mine recruiters. In the early 1930's the South Africa-based Witwatersrand Native Labour Association, known as Wenela, established at Marumbheni a licensed recruiting organisation for the Transvaal mines (Saunders, 2006: 65-66; Wentzel and Tlabela, 2006). Vail (1989: 264) describes the activities of Wenela in this area as 'the largest, most consistent, best managed recruiting agency operating in the area south of

the Sabi river'. In relation to Northern Rhodesia (Zambia), where Wenela recruited systematically in the 1940s and 1950s, a system of barges on all of the major rivers were used to transport recruits to central depots, switching to airline, road or rail transport in later years (Vail 1989: 382). While Wenela may have used their own craft at Marumbheni, it would be Eurocentric to suggest that the local inhabitants did not respond to the demand for mine labour by developing their own transport strategies, particularly if the means and material were at hand. Changes to transport arrangements reduced the need to locate Wenela agents at major rivers.

From 1955 - 1960 Joseph Blake-Thompson, Summers' informant, was employed as Depot Superintendent at Marumbheni by the African Associated Mines to recruit labour for the asbestos mines at Shabani in competition with the Wenela agent. Saunders (2006: 71) reports the use of a bus to transport recruits during this period. Men travelling on foot crossed the rivers at fords below Marumbheni such as that at Gayiseni on the Save River (Saunders, 2006: 228). This name derives from the *gayisa* or returning mine workers. They would stop at the Gayiseni crossing and call for porters from the village, and in times of flood would call for boats to assist in the crossing (personal communication with John Laing April 2013). Mozambican mine recruits came up the river to reside on the Rhodesian side of the border as they were financially better off claiming Rhodesian rather than Mozambican citizenship due to the wage repatriation arrangements of the respective governments. Regular travel by mine labourers would have generated sufficient river traffic to have justified the making of large canoes from the late nineteenth century to the 1950s. The author postulates that the Save River bank was artificially altered during this period to accommodate large canoes servicing the returning mine worker or migrant trade to keep these vessels safe in times of flood. Earlier docks built by local traders in the pre-colonial era may have been reused to service this trade. The Runde/Save River environment with its regular flooding during the summer rainy season is a dynamic environment, and a centuries old dock is unlikely to have remained intact without regular maintenance. Further remains of twentieth-century canoes may be found in such locations as well as the more remote possibility of medieval boats servicing trade between the coast and Great Zimbabwe.

Lack of historic and archaeological evidence for a dhow trade

From the secrecy surrounding the Mahenye canoe it appears that knowledge of the river transport trade was restricted to local inhabitants although rumours of a dhow trade and Arab dock persisted amongst explorers and prospectors (Dick-Read, 2005: 85; Saunders, 2006: 44; Summers, 1960: 284). Blake-Thompson was only shown the dock on the Runde River by the local people after many months residence as it was a sacred place. Having reported the find to Summers, Blake-Thompson escorted him to see it. Summers also investigated a sacred grove of trees at the site. He saw offerings of pots, gourds and scraps of cloth to a *Shave* spirit who lived in a baobab tree near water. *Shave* spirits are those of people who die away from their home area, are from another tribe or are foreigners (Summers, 1969: 207). Blake-Thompson had also been told that other places in the area had Muslim names, such as *iMosimani* (the Mussulman), but neither he nor Summers could locate these sites. Both men had been told independently of a large ring embedded into a rock on the north bank of the Save River near the confluence for the mooring of dhows, but were unable to locate it. These 'dhow rings' are still marked on modern maps in the general area of the confluence but none were ever definitively located and photographed (Saunders, 2006: 44, 68-71). Summers' visit to Marumbheni took place in 1959, a year before the mine recruiting depot was closed when the volume of recruits through the area would have considerably diminished. As a recent arrival in the area, Blake-Thompson would not have seen large canoes like the Mahenye canoe in use for migrant travel and by that time the dock which may have been used for the storage and protection of dugout canoes, had been abandoned. The tsetse fly tree clearing program took place before Blake-Thompson's arrival and the source of wood would have been destroyed.

Considering the final form of a functional logboat on the Save and Runde rivers

Although there is no way of knowing what the final hull shape of the canoe would have been or where it would have been completed, the conclusion was drawn that the interior compartment was finished at the felling site. Research into other better documented canoe-using cultures may give some guidance as to the final hull shape based on similar functional needs. However much of this research has focussed on sea-going canoes and a search of the literature failed to find a comparison of river with ocean going canoes or a discussion on the adaptations needed to function in differing waterways under varying weather conditions. River canoes are recorded for Oceania on the rivers of New Zealand but are better documented for Central America and Canada. Small New Zealand river canoes (*waka tiwai*) are described as having pointed two-ended hulls, little sheer and a round bottom while a larger version (*waka tete*) with top strakes and small prow or stern piece was used for travelling and fishing (Haddon and Hornell, 1936: 1, 215; Best, 1925: 22). Written from the perspective of Central American trade networks, McSweeney's (2004) useful study of the 300-year old logboat trade in the Mosquitia region of Honduras and Nicaragua illustrates the complex web of exchange amongst remote rural river peoples of both canoes and cargoes but only indirectly considers canoe shape and form. Miskito logboats are currently made far inland from where they are ultimately traded, whether for the ocean or river trade. The river canoes which are flat-bottomed and shallow-sided, vary from two-foot wide family canoes to five-foot wide freight canoes that can hold up to 1,200 kg, or over twenty passengers (McSweeney, 2004: 641).

In Northwest Canada specialised river canoes developed such as the shovelnose and spoon canoes, that were shallow, narrow and squared off at the ends. The shaping of these logboats normally took place at the waterside and only rough cutting out of surplus wood took place where the tree was felled to lighten the canoe for hauling to water (Brown, 2005: 82). The hull shape was 'gently rounded from side to side, so that cross-currents and spiral eddies in the streams wouldn't catch the ends of the canoe and turn them about'. Brown (2005) further comments that these canoes were poled rather than paddled, requiring great skill and balance from their handlers. Brown's description of river canoes fits that of the *mokoro* and canoes used today on the Upper Zambezi River as observed and tested by the author. These are surprisingly stable when poled or paddled standing up. Moreover on African rivers a standing position gives better visibility allowing the poler/paddler to avoid the wild life hazards.

The design of African logboats must accommodate the need to be silent on the water so as not to unnecessarily disturb the wildlife. It is therefore likely that the hulls of large travelling canoes such as the Mahenye canoe were also gently rounded and smoothed off to prevent catching by eddies and reduce the noise made by progress through the water. Examination of the Baines painting (Figure 3) shows canoes with rounded hulls, high sides and steeply angled prows as do the photographs of Batonga dugout canoes. The Mahenye canoe's interior compartment with its flat floor and sloping sides occupies only half of the log (Figure 7). This looks like a deliberate design feature. In other canoe building traditions, high sides served to prevent capsizing such as in the Malawian *bwato*, used for both river and lake fishing (Nsiku, 2003). The central opening of the *bwato* is much narrower than the half metre of the Mahenye canoe. This narrow aperture requires a different style of paddling and forces the Malawian paddler 'to sit with the backside perched on both lips of the hull, spanning the central opening' (Nsiku, 2003: 154). These design considerations of stability, safety and propulsion by standing paddlers or polers appear to be incorporated in the large travelling canoes of the Zambezi River and it is likely that the Mahenye canoe and other such canoes on the Save River would have had similar features.

Conclusion

During the short visit to the confluence of the Runde and Save Rivers, the riverine harbour documented by Summers (1960; 1969) was not located but a partially completed trading or travelling canoe of over nine metres long was investigated. This discovery of a canoe of this size may point to the existence of other historic specimens in this under-investigated region of Zimbabwe and Mozambique. The literature on prehistoric African river canoes is scant with modern studies focussing on fishing resources and methods. Lack of information on river logboat design and functionality in the literature needs addressing as well as cross-cultural comparisons particularly across Africa. Unlike studies into the indigenous Canadian and Central American river canoe trade, little attention has been paid to the role of large logboats as transport and cargo carriers in the centuries-old trade for gold, ivory and slaves. The Baines painting and existing records show that the Portuguese trade was carried from the coast to Tete on the Zambezi River in locally made logboats or *almadias*, and from there by foot to inland trading centres. In concluding that the Save River route to the Zimbabwe interior was unknown to the Portuguese, Summers (1969: 208) suggested that this waterway was in use from the eighth or ninth centuries but was abandoned before 1500AD. Further research in Portuguese and Indian archives such as those at Goa, may produce more information on this river route to the Zimbabwe interior.

The finding of the Mahenye canoe suggests that a canoe industry similar to the *almadias* trade, manufactured by local inhabitants prevailed in this area of Zimbabwe rather than the import of exotic craft of foreign origin favoured by Summers. Only a local manufacturing activity would persist into modern times particularly when stimulated by the transport needs of labour recruitment and an abundant supply of suitable wood conveniently located near the river banks. River conditions such as flooding after seasonal rains as well as fluctuating demand could have led to the re-construction of wharves or docks or the re-use of old docks, for the safekeeping of valuable vessels at convenient locations on the river. If these locations can be identified and located, including the dock observed by Summers and Blake-Thompson, other examples of ancient watercraft may be found preserved in the alluvium. The surrounding area should also be investigated for archaeological evidence of both local and imported artefacts and pottery. The now demolished settlement of Marumbheni is believed to have commenced in the nineteenth century. However, if Summers (1969:208) is correct and the confluence is 'the highest point for seaborne navigation and the very one where one would expect to find overseas traders setting up a trading post, unload their cargoes and clean their ships' then archaeological evidence for a medieval trading post may well exist. The finding of such evidence would confirm this as a trade route to the Great Zimbabwe culture and provide reliable dating evidence.

Bark boats continue to be made in this region but have also not been documented. The author was not in the area long enough to research smaller canoes or bark boats in current use and no indigenous craft were observed on that stretch of the river. A tradition of bark boats along with that of fishing rafts is reported from Lake Chilwa in Malawi (Chirwa et al, 1966). Darrel Plowes donated a bark boat from the Gaerezi River in the Nyanga district to the Mutare Museum where it is on permanent display. In 2000 he also observed the use of bark boats on the Pungwe River when visiting the Gorongosa National Park in Mozambique (personal communication with Darrel Plowes 8 January 2014). Further research needs to be done into the historic and current use of bark boats in Zimbabwe and Mozambique.

The Mahenye canoe although incomplete, provides evidence for early twentieth-century river traffic between Mozambique and Zimbabwe, probably serving migrants and mine workers. Reports of early explorers and hunters point to the commonplace use of canoes of several sizes which were adapted to the hazards of a river environment shared with predatory and dangerous large mammals and reptiles.

Standing handlers using long paddles as well as poles to propel large canoes is a likely adaption. Research in the archives of mining and recruiting organisations for this period may shed light on transport methods for mine workers, including the use of watercraft where rivers were navigable. Examination of the Portuguese literature, diaries, travel journals and illustrations from the first explorers in Mozambique may provide corroborating evidence as to canoe design, size and use. Models in museums brought home by early explorers and hunters would also confirm the styles of watercraft favoured in specific circumstances. Canoes profiles would have been replicated in the material culture of the people such the wooden bowls of North-west Canada, and may also be a source of corroborating data.

The Mahenye canoe may have survived because it was incomplete and had been left at the tree felling site some distance from the river. Its veneration as an object associated with the ancestors may have also contributed to its preservation. In addition its current location under dry bush thickets on a sandy well-draining soil near the Mahenye village has contributed to its survival. Moving the canoe to a museum may be difficult if not impossible. Conservation of the canoe using known methods of wood preservation could be considered. In the short term it can be left undisturbed and the Mahenye villagers, to whom this canoe belongs, supported in their care of an increasingly rare example of indigenous watercraft. The challenge for future researchers is to find Summers dock so fleetingly recorded in his written work, and other evidence for a long term indigenous river trade.

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Ancient Connections between China and East Africa

Chapurukha Kusimba

American University, Washington DC
E-mail: kusimba@american.edu

Introduction

Postcolonial relationships between China and Africa have revived interest in understanding early interactions between the two regions. African domesticates like millet and sorghum were domesticated in Asia as early as Shang (Yin) times while Asian domesticates like banana and rice found their way to Africa similarly early. There is, however, little archaeological evidence for more direct contact between East Africa and China. It has often been assumed that contact at this point was more indirect, through overland trade and migration across the Eurasian steppes, the same pathway that African hominids used in the initial migrations out of Africa. In more recent times, beginning from the Tang Dynasty (ca. AD 618-907), linkages between East Africa and China became more regular. The continuous occurrence of Chinese trade ceramics in dateable archaeological contexts at several key sites in East Africa from the Tang through Qing Dynasties (ca. AD 618-1912) points to a long, productive relationship between China and East Africa. My chapter reports on ancient Chinese ceramics excavated at Kenyan historic sites and discusses the potential of the long-term collaborative research agenda on ancient and contemporary relations between China and East Africa.

East Africa and the Indian Ocean Trade

Over the past five decades, investigations from archaeological as well as historical sources have revealed that the cultural growth on the eastern coast of Africa is closely linked to the development of complexly-organized merchant towns, receiving ship-borne goods from the far corners of the world and sending forth the produce of the interior of Africa (Kusimba 1999: 2). The coastal region of east Africa played a prominent part in world history from the very beginnings of recorded time. In prehistoric times, it was the bridge from which the first Africans left the continent to venture east and colonize the world. In historic times, the north, the Somali coast, offered entrepôts to the caravan routes leading to the Nile valley through such legendary towns as the forbidden city of Harar. Its central reaches in Kenya and Tanzania linked the people and produce of the Great Lakes region in the Highlands with the markets of Zanzibar and the island archipelagos. In the south, ports along the Mozambique Strait trafficked inland with the plateaus of Zambezia and the mineral riches controlled by the Shona kingdoms ruled from monumental towns like Great Zimbabwe (Kusimba 1999:1; Kusimba et al 2017; Pikirayi 2001, 2010; Pwiti 2005; Mitchell 2005; Sinclair et al 2012).

Up to the 1980s, the east Africa coast was strewn with the remnants of this ancient culture: the ruins of once-flourishing towns with their elite mansions and mosques built in coral rag.¹ These prominent remains were built by ancestors of the modern coastal peoples about 500 to 1200 years ago. Their culture was nominally Islamic, and they interacted with and were influenced by centuries of economic contact with and colonization from southern Arabia, western India, and Portugal (Hourani 1995; Pearson 1999, 2003). Direct and indirect connections with communities as far as Indonesia and China were likely established early following the successful settlement of Austronesians in Madagascar (Dewar and Wright 1993; Dewar et al 2013). Yet despite this welter of external contacts, it was a culture that remained essentially African in

¹ Hundreds of these ruins have been destroyed since the 1990s by developers, local communities, and neglect (Kusimba 1996 see also Mturi 2005, Pollard et al 2012; Schmidt and McIntosh 1996).

nature (Mathew 1956).

Archaeological and anthropological research specifically aimed at understanding ancient transcontinental communication between Africa and Eurasia is still in its infancy. Subaltern scholarship attempts to fill the void has callously engaged in silencing Africa from the conversation (Abu-Lughod 1989, 2008:186-89; Chaudhury 1985, 1990). Fortunately, this is beginning to change (e.g., Hawley 2008; Pearson 1999, 2003). Africa and Asia have shared in cultural, economic and technological innovations for millennia. Many of the food crops that are now staple foods in much of sub Saharan Africa were first experimented with and domesticated in Asia. Some of the African domesticates including sorghum, millet, coffee are widely consumed by contemporary Asians as staples (Crowther et al., 2014, 2016; Prendergast et al., 2016; Shipton et al., 2016).

Ancient connections between Africa and Asia, including China are exhibited in the numerous archaeological remains that have been recovered at many sites across the continent (e.g., Chami 1998; Chittick 1974, 1984:65-71; Fleisher 2001; Horton 1996; Horton and Middleton 2000; Pikirayi 2001). Artifacts including Indo-Pacific beads, glass, Middle East glazed pottery and jewelry, Chinese stoneware and porcelain, among others, have been recovered at nearly all medium to large settlements in the Eastern and Southern African subcontinent from the Tang Dynasty to the present (Wilson 2016). This non-African materiality bears witness to the global connections, contributions, and complexity of Africa's past and systematically dismantles the long-held narrative that Africa was isolated from Eurasia and, apart from north Africa, contributed precious little to global civilization (Lughod 2008:188).

Recent and ongoing collaborative research investigation across Africa and Eurasia is unveiling new data sets that enable us to move beyond traditional ways in which archaeologists and historians have been able to use exotic artifacts. In Africa, non-local pottery, including Islamic and Chinese porcelain, has been employed in the: (1) determination of settlement chronologies (2) establishment of Islam and Islamization, a code word for Arabian immigration; and (3) establishment of commercial and political colonies in Africa by Asians. Much of this way of interpreting ancient connections, contributions, and complexities of cultural interaction has been thoroughly discredited (Fleisher 2003; Kusimba 1999, 2006; Lavolette and Fleisher 2005; Mitchell 2005; Pearson 1998, 2003).

Global Connections: China and Africa

Trade played an important role in the development of cultures throughout ancient times. Trade linked diverse peoples and communities in a network of interactions that had a huge impact in the advancement of daily life. Archaeologists and historians have documented evidence of biological, cultural, linguistic, commercial, and technical communication between East Africa and the Middle East beginning from the early first millennium CE (e.g., Bourgeulie 1998; Ray 1998; Sedov 1998; Serjeant 2000; Steensgard 1987). *The Periplus of the Erythrean Sea*, a third century mariner's guide presumably written in Alexandria, mentions that iron lances, hatchets, daggers, and awls made at Muza, east of Aden constituted trade items consigned for African markets (Casson 1989). Trade items from the East African coast consigned for foreign markets in India, the Middle East, and China included marine products - tortoise shells and ambergris; animal products - ivory, rhinoceros horns and cat skins; and vegetal products - mangrove poles, wood, and timber. Turtle shells and ambergris were in high demand in India and China. (Freeman-Grenville 1962; Horton 1996:414). Ivory, rhinoceros horns and leopard skins were exported to India, China, and the Persian Gulf. (Yulvisaker 1982). Timber for building and aromatic products were needed in the Persian Gulf until relatively recently. Demand for African timber in the Gulf was high enough to be reported by Ibn Hawqal c. 960 CE who wrote that houses in Siraf were built of wood from the country of the Zinjs (Freeman-Grenville 1962).

Textiles including silk and cotton were spun in Mogadishu, Pate, Manda, Zanzibar, Kilwa, Mahilaka, and other major towns, and their products were widely traded in Eastern Africa reaching as far as Egypt. Upon their visit to Pate, the Portuguese were significantly impressed by the high-quality silk manufactured there (Freeman-Grenville 1962). Mining and working of iron was an important industrial activity at Malindi and other Swahili towns. The superior quality of iron products made in East Africa was impressive enough to be added to the list of African exports to India by Indian merchants who regularly visited the coast with the aid of annual monsoon winds (Horton 1996:418). Noted Arab scholar Al Masudi who visited East Africa in 912 CE left one of the most cogent descriptions of the iron industry on the coast in his *The Meadows of Gold and the Mines of Gems*. Commenting on the ongoing transoceanic trade between East Africa and Asia, he wrote:

The Zanj exported gold, silver, iron, ivory, tortoise shell, and slaves. Iron was probably the source of the largest profits. Indian merchants came to buy iron and took it back to their own country where they resold it to the manufacturers of iron weapons. The Zanj of Malindi owned and worked iron mines, as did other towns, but Malindi must have been the most important. East African iron was much valued in India, partly because there was no lack of supply and partly because it was of good quality yet easy to fashion and they became masters of the skill of working. The Indians were said to make better swords than anyone else, and weapons made of the iron of Zanj were used throughout the Middle East and countries of the Indian Ocean (Freeman-Grenville 1962:20; Shinnie 1965:107)

Long-distance trade was a crucial factor in the development of the complex African chiefdoms, states, and urban polities that emerged during the later half of the first millennium of our era to the 16th century CE. Along the East African coast, from Somalia to Mozambique, autonomous urban polities emerged. The residents, who were drawn largely from the region, pursued diverse but complementary vocations, which included hunting, agriculture, fishing, and trading. Available records indicate connections with countries to the north extending into Eurasia. The locals' engagement in local, regional, and transoceanic trade appears to have served as the main catalyst for building communal and personal wealth which witnessed a steady transformation of the villages and hamlets into small towns, cities, and ultimately to city states that increasingly boasted large and diverse citizenries (see Tables 1-2). As these cities transformed into states that hosted an economic and political elite which vied for managerial control of sources of wealth, they attracted attention and strove to forge and maintain relationships and build alliances with their transoceanic and hinterland partners (Kusimba and Kusimba 2005; Kusimba et al 2005). The cities' prosperity was affirmed and fostered by social and political stability across the region. Evidence for relational and political stabilities is found in bonds, pacts, and treaties, usually called blood brotherhoods in East Africa (Herlehy 1980, 1984). Within the cities themselves, alliances sanctified through opportunistic intermarriages among the political and economic elite, who included foreign residents, were the norm (Tolmacheva 1990). These relationships bound the cities' residents to their neighbors in the rural hinterland, and strangers across the sea and were the kernel upon which African connections, contributions, and complexity depended. Continued regional and intercontinental prosperity depended upon forging and maintaining commercial and cultural dialogue among interacting partners (Allen 1993; Middleton 1992; Oka and Kusimba 2008; Udovitch 1970).

It is now apparent from genetic studies that the residents of the early coastal towns and city-states were initially drawn from different linguistic and ethnic groups, but in time, one language, Kiswahili, became the dominant language of choice (Nurse and Spear 1985; Hinnesbusch 1993; Kusimba et al 2010, 2011; Raaum et al 2018). Thus, economic and social interaction among diverse groups, who made their living from hunting, herding, farming, and trading, must be credited with laying the foundation upon which international trade exchange systems developed. Towards the last quarter of the first millennium, ca.

750 CE, Islam was introduced and gradually expanded to become the primary religion and means of elite cultural expression by the time of European contact in early 1500 CE and into the present day (Horton 1996, 2012; Kusimba 2012).

At the beginning of the second millennium CE, Eastern and Southern Africa, indeed much of Africa as a whole, had become a regular partner in the thousand-year-old long distance exchanges that reached as far as the Arabian Peninsula, India, Sri Lanka, and China (Mitchell 2005; Pearson 2003; Walmsey 1970; Warmington 1974; Wilkinson 2003). By the 13th century there had emerged a local African urban elite that financed, managed, and controlled local, regional, and transoceanic trade and communications along the East African seaboard. Innovations in ironworking aided agricultural intensification and specialization in hunting, fishing, and herding. These changes improved the quality of life and precipitated population growth and economic prosperity for some 200 years.

In the late fifteenth century, however, Europe began to control and benefit from the ancient trade in the Indian Ocean (Acemoglu and Robinson 2012). The rivalry for control of Indian Ocean commerce was economically crippling for Africa and Asia and beneficial for Europe (Hodgson 1992). The consequences of competition for control of transoceanic trade led to warfare which favored Europeans due to their superior naval and military power. The subsequent sixteenth century ushered in an era of decline and dependence while paving way for Europe's colonization of Asia in the 17th century and Africa in the 19th (Oka et al 2009).

Economic decline and the ceding of sociopolitical power to European nations was a region-wide phenomenon that affected Asian and African political economies. Legitimate and mutualistic regional and transoceanic trade gave way to the now-infamous ivory and slave caravans, financed by overseas merchant groups. Coastal slave raiding expeditions weakened long-standing alliances among peoples, cut off traditions of herding and farming and destroyed populations. Today, the ruined walled towns of the east African coast and in the African interior suggest the magnificence of Africa's achievements and contributions to world history (see Table 2).

Cultural Period	Predominant Domestic House Ground Plans	Community Settlement Patterns	Subsistence Patterns	Community Size and Structure
Period I (BC 100-AD 300)	circular	free and central-based wandering, semi-permanent sedentary to simple nuclear centered	hunting, gathering, fishing, gardening, barter	seasonal camps and semi-sedentary hamlets of single family groups and small bands
Period II (AD 300-1000)	Circular, globular, cylindrical	increasing restricted wandering and semi-permanent sedentism to simple nuclear centered	hunting, fishing, gathering, agriculture production, barter, local and some inter-regional trade	seasonal camps, small scattered sedentary villages of closely related kin
Period III (1000-1500)	globular, cylindrical rectangular	restricted wandering, semi-permanent sedentism to long and continued sedentism	hunting, fishing, gathering, intensification of agriculture production, inter-regional, and international trade	seasonal camps, semi-sedentary camps, large villages, small to medium-sized towns, and cities with diverse populations
Period IV (1500-1950)	cylindrical, rectangular	restricted wandering, semi-permanent sedentism to long and continued sedentism	hunting, fishing, gathering, intensification of agriculture production, inter-regional, and international trade	seasonal camps, semi-sedentary camps, small to large villages, towns, and cities with diverse populations

TABLE 1. THE RELATION OF SUBSISTENCE, COMMUNITY, AND SETTLEMENT PATTERN TO HOUSE PLAN ON THE EAST AFRICAN COAST

Class	Size (Hectares)	Features Present	Settlement Type	Number of Sites	Examples
5	1.0	0-1 mosques, <5 tombs	Hamlet	34	Mgangani, Kinuni, Kongo, Munje, Diani, Tiwi
4	< 2.5	1-2 mosques, 5-10 tombs, 1-5 coral buildings,	village	39	Shee Umuro, Mwana Mchama, Kilepwa, Mnarani, Shirazi, Rubu, Tumbe, Galu
3	2.5-5.0	1-2 mosques, > 10 standing coral houses and town walls> 2 tombs	Small Town	19	Koyama, Ngumi, Chula, Ishakani, Kiunga, Omwe, Shee Jafari, Kitoka, Kilepwa, Jumba la Mtwana, Dondo
2	5.0-15.0	2 mosques, > 2 cemeteries, 50-100 coral houses, enclosed stone houses and open mud and coral houses	Towns	9	Merka, Munghia, BurGao, Siyu, Shanga, Manda, Mwana, Mtwapa and Vumba Kuu
1	>15	3+ mosques, 3+ cemeteries, > 100 standing coral houses, existence of wards	Cities	8	Mogadishu, Barawa Malindi, Lamu, Mombasa, Pate, Ungwana, Gede

TABLE 2. CLASSIFICATION OF COASTAL SITES

The Role of Islam in Linking China and East Africa

The statement attributed to Prophet Mohamed, ‘seek knowledge even unto China’, lays the foundation for understanding the importance of China in global trade in the Western Indian Ocean and Southwestern Asia in ancient times. The Memorial Mosque in Guangzhou is the first mosque in China. Built on the orders of Emperor Yong Hui in 651 CE, the mosque, which still stands today, provides the earliest evidence of the formalization of Islam in China. Historically and in ancient times, there were two routes that linked China to western Asia and Africa: an overland route through central Asia and western Asia and a sea route through the South China Sea and the Indian Ocean by way of Indonesia, Sri Lanka, and the Persian Gulf (Horton 1996:307).

The Tang through Song Dynasties (618-1279 CE) marked six centuries of unprecedented technological, scientific, and sociopolitical advances in Asia, and has been called the period of Asian renaissance (Abu-Lughod 2008:187; Gordon 2007; Udovitch 1970). The rise of Islam and imperial unification and consolidation of power in China, central Asia, Western Asia, and North Africa under the Caliphates based in Baghdad and Cairo, and the rise of large states and kingdoms in South Asia fostered social and political stability.

Advances in science and technology were accompanied by investment in large industrial complexes that manufactured silk, ceramics, beads, jewelry, cloth, spices, and other items for the global market, and heralded the first truly global economy since the fall of the Roman Empire (Vance 1970; Wilkinson 2003). Local traders and merchants, encouraged and quite possibly financed by the political elite, felt more emboldened to invest in long-distance and riskier business enterprises. Networks of trade created conditions for the free movement of traders, merchants, scholars, and adventurers leading to bidirectional transfer of knowledge, culture, and people (Table 3).

Islam and its cultural norms were transmitted to China, central Asia, and Africa during this period. There was also a simultaneous transmission of cultural values in the opposite direction. Relations between China, Central Asia, Western Asia, Southeast Asia and South Asia during the Tang Dynasty through the Sung, until the Ming Revolt, were a combination of commerce, diplomacy, and gift exchange. The political elite played a crucial role in the establishment of trade agreements. For example, between 651 and 798 CE, nearly 40 diplomats visited China. There were also increased numbers of trade missions by Arabian and Persian traders. The convergence of politics and commerce benefited from the peaceful climate that was fostered between the Caliphates and the Chinese Empire.

Region	Science	Technology	Economy	Politics
China	Chinese medical systems	Porcelains, Stonewares	Global Trade	Tang, Sung, Yuan Dynastic rule
Central Asia			Global Trade	
Southeast Asia			Global Trade	Srivijaya Empire
Southwest Asia	Unani	Lustre wares, Green Glazed wares	Global Trade	Abbasid in Baghdad and Mamluks in Cairo
South Asia	Ayurvedic	Crucible steel	Global Trade	Chola, Rashtrakuta, Chalukya
Africa		Crucible steel	Global Trade	Swahili, Great Zimbabwe

TABLE 3. RENAISSANCE IN ASIA AND AFRICA DURING THE TANG-SUNG DYNASTIES 618-1279 CE

Seen through a strictly anthropological lens, the Eastern and Southern African subcontinent was an integral component of a large network of ancient maritime trade in the Indian Ocean frequently mentioned in early travel accounts by Chinese, Arab, and Indian mariners and scholars. The *Periplus of the Erythraean Sea* published in the 1st century CE is a standard work describing the expansive interaction spheres and the agents of this universe (Casson 1984, 1989). Much of the interactions appear to have been indirect through the agency of South Asian or Southwest Asian merchants, primarily Persian, Arabian, Indian, and quite possibly Indonesian. Although there is ample archaeological evidence of Chinese material culture in Africa, there does not seem to have been regular direct evidence during the Roman colonization of North Africa. The earliest known evidence for direct contact dates between 202 BCE and 220 CE. The first mention of Africa in Chinese sources has been attributed to Tuan Ch'eng-Shi (died 863 CE), in the *land of Po-pa-li*, the fabled land of Punt to Greeks or the Cinnamon Coast to Romans (Duyvendak 1949).

Bulk trade consisted of foodstuffs and food crops including rice, honey, millet, and bananas. Other products exchanged included textiles like silk and cotton cloth, spices and aromatics, precious stones, and construction materials. These include mace, nutmeg, cinnamon cloves, ambergris, rubies, diamonds, sapphires, emeralds, pearls, porcelain, beads, gold, silver, cowry shells (*Cyraea moneta*), animal skins, leather, and slaves² among others (Curtin 1984; Pearson 2003:84, 86). These much-sought-after items are not preserved in the archaeological record and are not easy to account for where literary records have not survived. Instead, the most frequently recovered archaeological remains have included jewelry, ceramics (stoneware and porcelain), glass, beads, and coinage. For instance, Chinese trade ceramics have been recovered at virtually all urban settlement in East Africa. Most appear from the Tang-Sung transition to modern times (Table 4).

The recovery of Chinese coinage from several East African settlements, including Mogadishu, Kilwa, and recently at Mambrui and Manda dating from the Song through Ming Dynasties, provides critical evidence for interactions between China and East Africa (Kusimba et al 2018; Pankhurst 1961:268). Such evidence, especially that of coinage, points to possible diplomatic missions between China and Africa. The issuance and circulation of gold coinage was highly restricted and when issued, often connected to direct diplomatic gestures from the Emperor to his counterpart. Therefore, the presence of imperial Chinese coins might provide the most direct archaeological evidence for direct contact.

Archaeological investigations on the African subcontinent and on the Western Indian Ocean, at sites such as Chaul, Palshet, Sanjan and Kelshi (Gogte 2002) have yielded material remains which point to nearly 2000 years of continuous interaction between East Africa and India at least from the eighth century up to the eighteenth century. Islam and its cultural norms were transmitted to China, central Asia, and Africa during this period. There was also a simultaneous transmission of cultural values in

² African slaves were first brought to China by Arab merchants during the Tang-Sung times (Pearson 2003:85)

Period	Time	Archaeological Finds	Transoceanic Trade
Period V	1750-1950 CE	Indo-Pacific beads, glass bangles, Chinese blue on white, Japanese Karatsu ware, European Floral ware Islamic monochrome pottery, iron and iron slag,	Frequent regional and international trade-- Persian Gulf, India, China (decline) and Europe, Americas (expand)
Period IV	1500-1750 CE	Stylistically diverse local pottery, Indian pottery, European peasant floral wares	Regular regional and international trade-Persian Gulf, India, China, Indonesia
Period IIIb	1250-1500 CE	Stylistically diverse local pottery, spindle whorls, coins, portable stoves and lamps, chlorite schist, Islamic monochromes, Chinese Longquan and Tongan ware, Indonesian Sawankholok or Sisatchanalai jars, Indo-Pacific beads and Egyptian glass,	Regular regional and international trade with China, Southeast Asia, India, Persian Gulf
Period IIIa	1000-1250 CE	Stylistically diverse local pottery, rock crystal, spindle whorls, copper and silver coins, Islamic Sgraffiato, Chinese Qing Bai, Cizhou ware, Bronze mirrors, Indo-Pacific beads,	Regular regional and international trade with Persian Gulf, Egypt, India, and possibly China
Period IIb	600-1000 CE	Zanjan Pottery: red barnished and hagshaped cooking pots, graphite finsh and trellis patterns; Partho-Sassanian Islamic, white-glazed, Chinese green glazed stone ware, grey-green 'Yue' ware, Guangdong Coastal Green, white porcelain, white stone ware, and Egyptian glass, carnelain beads, iron and iron slag	Egypt, Persian Gulf and Indian Subcontinent
Period IIa	300- 600 CE	Azanian pottery: triangular oblique, and double zigzag patterns predominate; Sassanian Islamic, glass, and carnelian beads and Roman Amphora	Some trade
Period I	100BCE- 300 CE	Local Early Iron Age pottery, iron and Iron slag	No Evidence

TABLE 4. DISTRIBUTION OF ARCHAEOLOGICAL REMAINS AT COASTAL SETTLEMENTS THROUGH TIME

the opposite direction. Relations between China, central Asia, Western Asia, and South Asia during the Tang Dynasty were a combination of commerce, diplomacy, and gift exchange (Wilkinson 2003). Chinese records show that nearly 40 diplomats visited China between 651 and 798 CE. Trade missions by Arabian and Persian traders who primarily used the overland trade route via the Black Sea, and Indian merchants who sailed through the port of Malacca, exponentially increased.

China had become the fulcrum upon which global trade in Asia, Africa, and Europe hinged (Mitchell 2005; Pearson 2005). The convergence of politics and commerce benefited from the peaceful climate that was fostered between the two major empires - the Abbasids and China. The presence of Indo-Pacific beads produced in India (Dussubieux et al 2008), the occurrence of typical Indian pottery, and to some extent, potable cooking stoves in archaeological contexts on the East African Coast indicate locational and relational stability that encouraged immigration between India, western Asia, and East Africa. The region and especially the main ports of trade had become cosmopolitan centers of commerce and hosted diverse Diaspora residences and quarters (Laviolette 2008).

Today the great majority of East Africans who identify themselves as Swahili still live on the coast or within a few miles of it. They are Muslims and speak an Eastern Bantu language, Swahili, which has over the years borrowed and adapted Arabic, Hindi, Urdu, Portuguese, and more recently English words into its vocabulary. This is testimony to the transnational character of the world of the Indian Ocean nurtured by the 'peaceful coexistence' fostered between 700 and 1500 CE when a power shift in favor of Europe destroyed the millennium-old global trade (Abu-Lughod 2008; Curtin 1984:34; Kusimba 1999). Swahili social structure, domestic and religious architecture provide testament to the cultural fusion of indigenous and diaspora value systems (Fleisher and Wynne-Jones 2012; LaViolette and Fleisher 2005; Mazrui and Shariff 1994; Knappert 1979; Middleton 2004). Nevertheless, these diaspora influences

did not change African peoples' identities as some scholars have vigorously argued. Rather as Swahili scholar Mohamed Abdulaziz (1979:8) reminds us:

The Arab-Islamic component ... acted as a strong cultural stimulus to the development of this urban form of African culture. Past historians have often failed to acknowledge the African initiative in the formation of Swahili culture. To them, it would appear, every aspect of urban living represented remnants of direct Arab presence. In any given period, the Arab population element must have been very small, compared to the population of the local inhabitants. Indeed, the trend on the Coast has always been the Swahilization of Arabs rather than the Arabization of the African Muslim inhabitants, in such facets of culture, and the mode of living in general. This trend has been so forceful that most Arabs on the Coast, who have settled here within the last two centuries or so, have lost their original culture and language and completely adopted Swahili culture (cited from Askew 1999:72).

Contrary to scholarship which has sought to diminish East Africa's role in international trade, tangible archaeological evidence for regular connections is traced as far back as third century CE, when cultural artifacts including Roman era beads and ceramics are found, Arab, Persian, Chinese and Indian jewelry, beads, cloth, and porcelain by the eighth century. These artifacts show East Africa's involvement and connection to the global trade networks of the Mediterranean Sea, Persian Gulf and Indian Ocean without whose participation the sought-after African products, including gold from Zimbabwe, would not have been available (Curtin 1984:34; Pearson 2003:76).

Chinese Trade Ceramics Found in East Africa

The ubiquity of Chinese porcelain and other precious stones recovered in archaeological contexts has shaped a narrowly-focused narrative for archaeology, leading to the assumption that porcelain was the most important item from China. Porcelain and other items are overrepresented in the archaeological record because of their survivability. In reality, they constitute a very small percentage, perhaps as low as five percent of the entire bulk trade carried between China and the western Indian Ocean (see Pearson 2003:85). As illustrated in Table 5 above, spices, cloth precious metals, and enslaved persons were among the principal products exchanged.

Trade ceramics, including Chinese porcelain excavated from the East African coastal sites, constitute 0.04 percent of the entire pottery assemblage. In other words, four out of every 10,000 ceramic shards recovered are trade ceramics (Mutoro 1978). Trade ceramics recovered in East Africa usually include Islamic stoneware and glazed ceramics, Chinese stoneware and porcelain, Indonesian and Thai porcelain, and Indian unglazed pottery (e.g., Chittick 1984; Horton 1996; Sassoon 1975). Trade ceramics have been reported from fifth-century contexts at Swahili sites such as Chibuene, Unguja Ukuu, Kilwa, Shanga, Manda, Mogadishu, and Ungwana among others. Interestingly, nearly 50 percent of trade ceramics are of Chinese origin (Oka 2008). The volume of transoceanic trade appears to have increased between the 10th -14th centuries in favor of Chinese ceramic products. The preference for Chinese porcelain over Islamic and Indian glazed pottery speaks to the superior quality of Chinese products (Oka 2008). Contact between East Africa and China from the Tang to Sung to Yuan Dynasties was primarily indirect through Persian and Arab merchants using the overland trade routes through central Asia across the Black Sea and through the South China Sea via Malacca, around the Coromandel coast, Aden and onward to East Africa through the agency of Chinese, Indian, and Arab merchants. Another equally-plausible reason for trade expansion by the Yuan Dynasty beginning from the 13th century is the encouragement it gave to Chinese merchants to invest in long-distance trade with other regions (Pearson 2003:89).

The technical and aesthetic superiority of Chinese ceramics over their potential competitors ensured their high value among the emerging local economic and political elite (Rice 1987). Chinese ceramics, unlike African and Islamic pottery, were made from a wide range of clay raw materials available throughout

China (Vainker 1991:218). Qualitatively, Chinese clay was non-vitreous such that when fired it matured at about 1200°C, forming non-porous vessels with a long use life. In addition, the design, form, and decorative motifs employed by Chinese designers - ranging from naturalistic to landscape - had universal appeal for use in both sacred and profane contexts, both in the home, entertaining and impressing one's guests, and as décor in temples and mosques. These attributes, including transportability and durability ensured the global high demand and near monopoly for Chinese trade ceramics.

As already noted above, import trade in East Africa included many items from China. However, the popularity of trade ceramics to East Africa continued from the ninth to the nineteenth century (Chittick 1984: 65; Horton 1996:303; Oka 2008). This importation declined when Europeans took control of the Indian Ocean trade. The Taiping rebellion destroyed the famous Jingdezhen kilns and disrupted overland trade in China (Abu-Lughod 2008:191).

Chinese Trade Ceramics Found in East Africa

Chinese trade ceramic excavated in East Africa date from the Tang to Qing Dynasty (610-1912). I describe them below.

Tongguan and Qionglai Wares (Changsha Painted Wares)

Tongguan wares are thickly-potted bowls with freely-painted abstract and floral motifs in green, and green and brown, under a yellowish or greenish-olive glaze. They are known to have been made at the Tongguan kilns near Changsha in Hunan Province, some considerable distance from the coast (Hughes-Stanton and Kerr 1981:57-9). The glaze was lead-free glaze of amber and brown color. The decoration was executed in underglaze color painted onto the body. Qionglai wares made in the Qionglai kilns in Sichuan are also painted wares. Many Qionglai wares were covered with a whiter slip and glazed light green, yellow or brown. The painting underglaze was usually in brown. Both wares, primarily in the form of bowls, were excavated at Manda and Shanga in ninth-century contexts (Chittick 1984:66; Horton 1996:303). Elsewhere, Tongguan and Qionglai painted pottery has been reported at Laem Pho and Ko Kho Khao on the Kra Isthmus in Thailand, at Prambanan in central Java, at Mantai in Sri Lanka, and Brahminabad and Bambore, in Pakistan, and Samarra in Iraq and Aqaba in Jordan (Ho and Bronson 1987; Vainker 1991:82; Whitcomb 1989:182. The wide distribution of Changsha painted ware is a very reliable indicator of the international appeal and increasing trade between China and the rest of the world, including Africa, as early as the Tang Dynasty (Horton 1996:303; Whitehouse and Williams 1975).

Grey-green ware of Yue type

Yue ware occurred in different colors from a matte / gray-green glaze on a grayish-white body. Color variation, ranging from yellow-green to gray-green to the rare jade, may be attributed to different sources of clay, firing conditions, and kilns. Although the precise regions of production are not reliably known, the diversity in color points to multiple kiln involvement, primarily those in Fujian, Guangdong, and Zhejiang (Horton 1996:303; Tregear 1976:47). The Chinese regarded green porcelain, which resembled jade, as being superior to whiter porcelain, which was popular abroad. Natural forms, including plants and clouds, typify the decorative motifs of early Yue ware and were incised by hand under the glaze. Later Yue wares have bird designs added to their repertoire. The popularity of Yue ware both in China and overseas is apparent in the second part of the Tang Dynasty (AD 618-907) and through the period of the Five Dynasties (AD 906-960). Yue ware, primarily bowls, have been found at Manda and Shanga and dated to ca. 750-920 CE (Chittick 1984:66; Horton 1988:311, 1996:303). Elsewhere outside China, these wares have been reported in Indonesia, Sri Lanka, Brahminabad in Pakistan, Siraf in Iran, Samarra in Iraq, and Fustat in Egypt (Tampoe 1989:64; Vainker 1991:72).

White Stoneware (Ding Ware)

Usually associated with Dingyao and Fujian kiln industrial complexes, white stonewares are dated to after 900 CE (Horton 1986:209, 1996:309; Hughes and-Stanton and Kerr 1981:72). They are composed of cream-colored paste with a white glaze similar to white porcelain, above, but more thickly potted (Chittick 1984:67). Decorations consist of faint vertical ribs on the body of the vessel. The forms are all open bowls with foot rings, which are slightly outward flaring (Horton 1996:309). They appear at Shanga and Manda in tenth-century contexts and are used 'beyond the twelfth century - at the time when the Ding kilns had converted to the production of true white porcelain' (Horton 1996:309; Chittick 1984:67).

White Wares (Qingbai Glazed Ware)

White porcelain or Qingbai wares are characterized by the absence of slip between the body and the glaze. Traditionally, the slip is widely used by potters to mask imperfections in the body and to provide a smooth surface for glazing. Typical white porcelain vessels were primarily made from the exceptionally-pure clays of Gongxian and Xing famous for their unusually low iron and titanium content. This accounted for the whiteness and their popularity both in China and abroad. However, like all other vessels, Qingbai glazed white wares were produced at different industrial complexes including those in Fujian, Jiangxi, Jingdezhen, and Dehua. Qingbai vessels have been recovered at Manda in unstratified contexts and assigned to AD 850-950 contexts (Chittick 1984:66) and at Shanga in the period spanning the twelfth and mid thirteenth century (Horton 1996:309). White porcelain has also been reported at several other sites and was imported into East Africa until the thirteenth century (e.g., Abungu 1990; Wilding 1980). Elsewhere large quantities of Gongxian and Xing wares have been found at Siraf in the Persian Gulf and Samarra in Iraq (Vainker 1991:67; Whitehouse 1968:17).

Longquan Greenware (Celadons)

Longquan greenware, also known as celadon, is characterized by light grey paste, very hard, with air bubbles, and slightly granular texture. The bowls usually have a pale grey 'sugary' fabric. The glazes range through shades of greens and grays to pure dark while the fabric thickness ranges from 3 to 12 millimeters. Most Longquan vessels tend to be single colored and were decorated with impressed or incised lines or molded forms. Although production at Longquan kilns in Southern Zhejiang began in the Five Dynasty period (AD 906-960) and intensified during the Song period (AD 960-1279), it was only during the Yuan period that Longquan wares became widely popular outside China. In fact, once established, demand for Longquan products rivaled and out competed local Islamic, Indian, and African ceramics (Tampoe 1989:65). The earliest examples in East Africa date only to the eleventh to early twelfth centuries (Horton 1996:307). The ubiquity of Longquan at archaeological sites in late thirteenth to early fourteenth century contexts attests to its popularity as export ware and points to incontrovertible evidence for mass production. James Kirkman recovered large amounts of Longquan wares from Ungwana, Gede, Ishakani, Kilepwa, and Mnarani (Kirkman 1954, 1963, 1966, 1974).

Two groups of these wares have been identified in East Africa. The first group consists of a white body, green glaze, and incised decorative motifs. The second group is the coarse type with a dark grayish body with a light greenish glaze. The foot-ring of coarse celadon is usually unglazed (Chittick 1974:309). Their popularity often transcended their beauty and utility both to their consumers. To the Chinese, the celadon impressed with a lotus signifying purity since the lotus is the seat of Buddha. To the Muslim Arabs and Swahili, celadons were highly valued because of their presumed ability to crack if they came in contact with poison (Sassoon 1975). This characteristic made them especially popular with the economic and political elite who often feared that at least once in their life, a close

member of the family would attempt to end their life prematurely in order to inherit their wealth or political office (Philip 1967).

Blue-on-white Porcelain

Blue-on-white porcelains were developed during the Yuan Dynasty (ca. 1279-1368 CE) at the Jiangxi kilns (Hughes-Stanton and Kerr 1981:242-7). This porcelain was a high-fired porcelain with an underglaze decoration in blue on a white background. This decorative style was achieved by first painting blue designs using cobalt directly on the unfired clay then blowing a transparent glaze on the piece and firing it in the kiln at temperatures in the range of 1350°C. Blue-on-white wares were so popular because any design could be painted on them. The Chinese blue-on-white were the commonest imported wares after the fourteenth century during the Ming Dynasty (Horton 1996:310; Kusimba 1993). The Chinese potters were very flexible and opportunistically made designs in response to market demands. Some of the common designs were dragons, primarily three clawed dragons, rhinoceros horn cups (for happiness), feather fans (zhong-li-quan's emblem - a Taoist god and discoverer of the secret of immortality), sacred incense burners, flaming pearls (for faith), the endless knot (a Buddhist symbol for long life), classic scrolls, diaper or diamond patterns, lotus panels (or false gadroons), vertical leaf patterns, chrysanthemums, a variety of unidentifiable flowers, and others. The list of possible designs was endless. Once the Chinese potters mastered the technique of achieving cobalt blue locally, the demand for these wares soared. Before 1300 CE the Chinese imported pure cobalt from the Middle East, hence the name cobalt blue (Zhu et al 2015).

Not surprisingly, both Muslim and European potters made imitations of blue-on-white and after the destruction of the pottery factories of Jingdezhen. European, Arab, Persian, Indian, Japanese, and Thai potters had mastered the technique well enough to establish pottery factors that made Chinese imitation porcelain to satisfy the global demand of Chinese porcelain (Chittick 1974:310; Oka et al 2010).

Transitional Pottery

Transitional Pottery was made between 1573 and 1683 from the time of emperor Wanli (1573-1620) to the early days of Kangxi (Vainker 1991:226). Transitional bowls with the yin-yang symbols first appeared during the Transitional Period. The Yin-yang symbols represents the duality of nature and the balance between male and female. They are recognized by the eight horizontal lines between the yin-yang representing natural forces - heaven, wind, earth, fire, water, vapor, thunder, and mountains (Sassoon 1975). Designs with dancing boys as well as naturalistic representations of the Three Friends, the pine, prunes, and bamboo, were added to the traditional trade ceramics out of China during the Ming (AD 1368-1644) and Qing Dynasties (AD 1644-1912). Transitional pottery recovered at Swahili coast sites has included bowls and dishes with formal floral patterns in blue and white on the inside and single colored glazes outside.

Dehua Wares

Dehua wares are a creamy white ware commonly referred to as blanc-de-chine or Chinese white were made in Dehua, in Fujian Province. Blanc-de-Chine were made during the Qing Dynasty following the re-opening of porcelain factories in the reign of Kangxi in 1683. Artifacts recovered in contexts have mostly been small objects and figurines (Sassoon 1975).

Yang-Ts'ai, the Foreign Colors: Rose Porcelains of the Qing Dynasty

Yang-ts'ai or Foreign Colors is often regarded by many authorities as one of the finest porcelain made during the Qing Dynasty. The French were impressed by this fine porcelain and christened it *famille*

Region	Local Merchants	Foreign Merchants
The East African Coast	Swahili (as brokers connecting interior with overseas markets)	Hadhrami, Yemeni, & Gujarat
Red Sea--Aden	Arabs	Gujarati,
Mediterranean--Egypt	Mamluk Arabs	Jewish Karimi
Arabian Sea--Sohar	Ibadi Muslims of Oman	Jewish Karimi
Persian Gulf--Hormuz	Persians	European, Hindus, Arabs
Gujarati--Cambay	Hindus and Jains	Persians, Arabs, Bengali
Cormandel Coast	Marakkayars, Bengali,	Persians
Melaka	Malay	Muslims, Hindu, Chinese

TABLE 5. IDENTITIES OF MERCHANTS INVOLVED IN INDIAN OCEAN MARITIME TRADE

rose, or the pink family. This was successfully achieved by combining fine particles of gold with tin to produce a dull-pink enamel polychrome. Yang-Ts'ai, wares appear in East African during the reigns of Yongzheng (1723-1735) and Qianlong (1736-1795) (Ho and Bronson 2004). Plain white wares, quite similar to the celadons, with blue borders and patterned with under-glaze incised lines, were also imported to East African during this period. Many were recovered at Fort Jesus (Kirkman 1974).

Uses of Imported Ceramics in East Africa

Archaeologists in East Africa traditionally use Chinese trade ceramics to: (1) characterize the nature and intensity of Indian Ocean trade and China's role in this commerce; (2) determine regional relative site chronologies, settlement patterns, and class and wealth distinctions; and (3) understand technology transfer and influence on cultural practice. Due to their durable character, Chinese trade ceramics constitute the clearest archaeological evidence for contact between East Asia and Africa. Trade ceramics has enabled archaeologists to determine relative site chronologies as well as dates of early contacts and connections (Kirkman 1974:87). As noted above, international trade in East Africa included many items from China, especially silk (Liu et al 2006). Trade in the Indian Ocean declined following the Taiping Rebellion, which ended with the destruction of the Jingdezhen kilns, and impacted both overland and oceanic trade. However, the popularity of trade ceramics and other Chinese products in Africa has continued up to the present day.

Data drawn from ethnography and archaeology continues to reveal the relatively early engagement of coastal communities including hunter-gatherers, pastoralists, farmers, and townsfolk in regional trade, which included transoceanic trade (Kusimba 1993, 2008; Kusimba et al 2005, 2013, 2017; Oka 2008, Oka et al 2008; Walz 2010). Chinese trade ceramics were among the principal imports and were universally popular and in high demand in the region. Trade ceramics were displayed in elite homes, in mosques, and on tombs to memorialize ancestors (Allen and Wilson 1982; Montella 2017; Wilson 2016). Thus, in addition to serving utilitarian functions, trade ceramics were symbols of prestige and status among the coastal East African peoples.

Trade Ceramics as Symbols of Power, Status and Prestige.

The Swahili elite home was sometimes built with niches, called *vidaka*, in which valued family objects were displayed. *Vidaka* were usually located in the inner sections of the home. These objects included expensive Chinese plates, bowls, and jars, Islamic bronze jars, plates, and other exotic items. Like other communities, the Swahili regarded the success and status of a family according to the size of its household and stone house, the beauty of the home, and the value of the contents. Since the Swahili were predominantly matrilineal, daughters often inherited their parents' homes. Families used their daughter's wedding ceremony to publicly display wealth through gift exchange. Public display of wealth in the form of Chinese trade ceramics, silk, jewelry and other expensive items served to enhance family status, prestige, and standing.

Use in Water Cisterns

Water shortage was a perennial concern for urban residents in East Africa. The Swahili constructed large water cisterns to collect rain water. Communal as well as extended family wells supplied water to the resident populations. Cisterns helped increase the humidity in the houses during the hot and dry seasons. Although the cisterns were a partial solution to the water shortage their construction provided a health risk. Because of their nonporous and non-corrosive qualities, the Swahili found Chinese porcelains to be finely suited for placing under the water cisterns primarily to monitor the cleanliness of the water and to provide shelter for the small fishes or cichlids so that when the cisterns were drained to be cleaned, the fishes would collect on the plates or bowls to avoid suffocation. Cichlids consumed mosquito larva keeping their numbers manageable. The white and blue-and-white porcelains made it easier to detect dirty water, even in the usually poorly lit windowless interior rooms of the Swahili homes.

Use to memorialize Ancestors

Chinese porcelain was placed on tombs to memorialize ancestors on the East African coast. The Swahili high regard for Chinese porcelain transcended its durability beauty, and function. Among the Swahili also, tombs memorialized ancestors to ensure continuity of the bond between ancestors and their descendants (Fleisher and Wynne-Jones 2012; Wilson and Allen 1982). Well-constructed and maintained tombs symbolized family or clan success and good standing in the community. Two general styles of tombs were built by the Swahili - those with pillars and those without pillars. According to Ahmed Sheikh Nabhany, pillar tombs were built for men while those without belonged to women. Only tombs of women were decorated with Chinese porcelain. This was both to show the identity of the entombed as well as the wealth of the family (Figures 2). Thus, although Islam forbade burial with property, the Swahili seem to have found a way of connecting with and honoring ancestors without dishonoring the Holy Qur'an. Swahili tombs are uniquely local and African. Pillar tombs do not occur in Arabia, Iran, or Iraq.

Discussion and Conclusion: Trade Ceramics as Evidence for Early Contact with China

The available archaeological evidence shows little evidence for direct contact between China and Africa before the Ming Dynasty (1368-1644 CE). However, as the pre-Ming records show, both regions were maintained indirect contact (e.g. Duyvendak 1949). Chinese imperial voyages increased during the Yuan Dynasty as trade with Central and Western Asia increased (Zhujiann 2006). However, historians hail expeditions through the South China Sea to the Indian Ocean to East Africa 1417 and 1419 led by Admiral Zheng He (his fifth voyage) as the standard. During this East African voyage, the admiral visited the East African coastal cities of Malindi in Kenya and Barawa and Muqdishu in Somalia. In an earlier visit to China, the ambassador of Malindi had presented to Emperor Yongle (1403-1425), the third Ming emperor, among other gifts a tsu-la (giraffe in Chinese?). Impeccable records regarding the voyages undertaken by Zheng He and his lieutenants were kept but these were destroyed following the palace coup following the death of the Yongle emperor (Kusimba 1999:1).

Despite this, some records of Zheng He's voyages are recorded in books written by his lieutenants who recount the ports, towns, cities, peoples, cultures, and products of places they visited. For example, Kung Chen published his *Record of the Barbarian Countries in the Western Ocean* (1434), Fei Hsin wrote *Triumphant Visions of the Starry Raft* (1436), and Ma Huan wrote *The Triumphant Visions of the Boundless Oceans* (1451). The fourth book was *The Record of Tribute-Paying Western Countries* (1520) and was a compendium of compass directions and mariners' charts incorporating the maritime knowledge acquired by Zheng He's expeditions. Fei Hsing's description of the east coast of Africa is instructive:

The country is situated in a remote corner of the west. The inhabitants live in solitary and dispersed villages. The walls are piled-up bricks and the houses are masoned in high blocks. The customs are very simple. They grow neither herbs nor trees. Men and women wear their hair in rolls; when they go out they wear a linen hood. The mountains are uncultivated and the land is wide; it rains very rarely. There are deep wells worked by means of cogwheels. Fish are caught in the sea with nets. The products of the country are lions, gold-spotted leopards, and camel birds [ostriches], which are six or seven feet tall. The dragon saliva [ambergris], incense, and golden amber. As merchandise are used vermilion, colored silks, gold, silver, porcelains, pepper, colored satins, rice, and other cereals (Mirsky 1964:256)

The golden era of east African coastal civilization was in the fourteenth century. Zheng He's visit to east Africa coincided with severe droughts which were followed by the devastating Little Ice Age (AD 1450-1715). Most Swahili settlements, Shanga, Manda, Ungwana, Mwana, Gede, Mnarani, Kilepwa, Jumba la mtwana, and Mtwapa among others, declined and were abandoned during this era. Upon their visit to Mogadishu, the Chinese sailors found the cities' citizens already dealing with the effects of drought. Intracommunity tensions and violent behavior were high. Lacking pastures, they fed fish to their camels, horses, cattle, and sheep (Mirsky 1964:256).

According to the late Swahili scholar Ahmed Sheikh Nabhany, the relations between the east African coast and China during the pre-industrial period transcends commercial contact through trade ceramics. In my interview with him in 1994, he told me of:

a Swahili legend that Washanga are descended from Chinese sailors who got wrecked along the coast of Shanga. The previous name for that village was Kwa Bakari. The story runs thus: On one of their voyages, a Chinese junk got wrecked along the coast of Shanga. The crew swam across and were rescued by the local inhabitants. Knowing that they would not be able to make the return voyage, these Chinese people asked for and were granted permission to settle on the island but outside the main village. For subsistence, these people used to fish and sell the fish to the town's people in exchange for rice, sorghum and other cereals. It so happened that one day when all the Chinese fishermen were at sea fishing, the village was attacked by some marauding forces [name not given] that killed everybody leaving very few women, children, and the elderly. When the Chinese fishermen returned in the evening not having any idea what had happened, they were very surprised to find the entire town in smoke with dead bodies strewn all over the place. The Chinese fishermen attended to the wounded and rebuilt the town. They also married some of the widowed women and raised families with them. The Swahili word for surprise is Kushangaa. I understand the name for Kwa Bakari changed to Shanga from that day on (Nabhany interview August 12, 1994).

Since our interview, Chinese geneticists have reportedly successfully identified Swahili residents who bear direct Chinese ancestry in the village of Siyu on Pate Island (Embassy of the People's Republic of China in the Republic of Kenya 2005 see Figure 3).

A Summing Up

Ancient trade between East Africa and China was a complex affair that involved many communities and took several routes. On the one hand, some African commodities such as ivory, ambergris, gold, rhinoceros horns, and sandalwood, were in high demand in Asia, including China (Freeman-Grenville 1962b:21). On the other hand, demand for Chinese porcelain and silk among African elites was high. The recovery of Chinese porcelain from early Swahili settlements places trade between Africa and China to the Tang Dynasty. Owing to distance, the volume of trade between East Africa and China was comparatively lower to that from Southwest Asia and South Asia. There were two principal routes of trade; the overland caravan route through central Asia and southwest Asia via the Persian Gulf and

Indian Ocean, and the direct maritime route through the South China Sea and Indian Ocean via Sri Lanka along the West Indian Seaboard to East Africa via Aden (Maalouf 2003; Pearson 2003; see also Horton 1996:418).

The expansion of maritime trade in the South China Sea and Indian Ocean saw settlements like Mantai and Galle in Sri Lanka and Chaul, Khambat, and Gujarat along the west coast of India, develop into major ports of trade (Carswell and Prickett 1980; Oka 2007; Oka et al 2009; Perera 1951). Hindu, Muslim, and Jewish merchants were the primary agents of the western Indian Ocean commerce (Ghosh 1994). Thus, significant quantities of whitewares made in Fujian, mainly Ding, qingbai, and molded whitewares, the use of Chinese and Indian coins, the close similarity of Chinese greenwares recovered at ports like Homs, Syria; Chaul, India; Shanga, Manda, and Mtwapa, Unguja Ukuu, Kilwa, and Songo Mnara (Horton 1996:418; Whitehouse 1976:146), point to the major advances that China had made in technology and which, though indirect, linked the two regions' global commercial networks. Our ongoing research at Manda, Takwa, Shanga, and Siyu in the Lamu archipelago in Kenya has begun a multi-year interdisciplinary project that hopes to address the nearly 2000 history of interaction between China and Africa.

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On the Early Maritime Silk Road between China and India

Wensuo Liu and Yanrong Wang

Department of Anthropology, Sun Yat-sen University, Guangzhou China

Some Chinese historical resources and related questions

According to Chinese historical sources, before the maritime ceramics trades became active during the period of Song Dynasty, 960-1279 CE, southern India and Sri Lanka were the final destination of China's maritime communication, the route of which was generally connected to the coastal port towns in Southern China and in Southeast Asia to India. Different from Land Silk Road, early Maritime Silk Road dominated trades in special sea-products and luxury goods for Mainland China, while the western tributary envoys and Buddhist monks also sailed through this route.

In China, during one thousand years from Han to Tang Dynasty (206 BCE-907 CE), the center of activities as diplomacy, trade, Buddhism and other foreign religions such as the so-called 'Three Foreign Religions', Nestorianism, Zoroastrianism and Manicheanism, although mainly occurred along the Land Silk Road, but China's development to Southeast Asia also led to animate the navigation and maritime communication. It was during the reign of Emperor Qinshihuang (221-210 BCE 秦始皇) of Qin Dynasty China started to rule the Indo-China Peninsula, and this rule was consolidated during the reign of Emperor Hanwudi (140-87 BCE) of Western Han Dynasty, and the later simultaneously had conquered the Southwest of China in order to open the access of tribute-trade connecting India and Bactria. These following events had had a profound historical influence: in 111 BCE, after the conquest of Southern Yue Kingdom (南越国), China had established the three prefectures named Jiaozi (交趾), Jiuzhen (九真) and Rinan (日南) in Vietnamese area, and five years later, in 106 BCE, the higher authority Jiaozi Cishi (交趾刺史部) had been set up at Guangxin City, today's Wuzhou City of Guangxi Province, under the reign of Mingdi (58-75 CE 明帝), China conquered the area of Ailao (哀牢) which bordered with Myanmar, close to eastern Indian areas. As a political influence, it made a close relation between Southeast Asia and southern China, and continued to the Southern Dynasties and Tang.

During this period, on the land, the silk trade was carried on under the control of traders from Great Yueh Chi (大月氏) or Kushan and then from Sogdiana in Central Asia; the porcelain trade suitable for marine transportation were still not formed. In the 'Tang-Song transition' period (618-1279 CE), the basic pattern of Chinese foreign relationship shifted from land-based to maritime. This change was caused by several reasons: from a political macro view point, the collapse of Tang Dynasty led to disorder in East Asia and Central Asia; from an economic point of view, it was related to the decline of silk trade and to the rise of porcelain's new trade mode. Apparently, the latter matched the climax of porcelain production in Song Dynasties, and the increasing maritime trade together with the development of navigation technology. For porcelain trade, maritime transportation seemed more suitable. The main business groups carrying on maritime trade were from Arabia and Southeast Asia. Therefore, this transition meant a new pattern in transportation, trade and foreign relations for China. With the expansion of China's economy and activities through the sea, India was no longer the most relevant partner to China. The Arabian traders started to play an important intermediary role between China and Arabian region, touching East African areas too.

The historical records related to Sino-Indian communications came mainly from the Buddhist literatures written under the Han Dynasties and the Tang one. On the other hand, since the compilations of Biography

of Da Wan, Shiji (史记·大宛列传), in the 2nd century BCE, and the Biography of Xiyu, i.e. the Western Regions, Hanshu (汉书·西域传) in the 1st century CE, Chinese official historians also created a system to record the informations about Tarim Basin, India (Hindu, Tianzhu), Iran, etc. Since 1930s, according to these historical recordings, Chinese scholars began to study the so-called ‘history of communications between China and western countries’, including Sino-Indian ancient communications. One of the most important works was *Zhong Xi Jiao Tong Shi Liao Hui Bian*, Corpus of Historical Materials Concerning Communications between China and West Countries, by Zhang Xinglang, published in 1930, a collection of historical records from Han till Ming Dynasty (1368-1644). Another one was *Zhong Yin Mian Dao Jiao Tong Shi*, History of Communication along China-India-Myanmar Route, by Xia Guangnan, published in 1948. This research mode had been changed lately to a new one called ‘history of relationships between China and foreign countries’. However Chinese scholars were seldom devoted to the studies of Indian history, the major pieces of research were collected in publications of Buddhist history in China and in India. About the history of Sino-Indian Buddhist communications, due to the different transportation and trade conditions by land and by sea, and along with the first official contact with Buddhism during middle Han Dynasties, 1st century CE,¹ the foundation of first Mahayana Buddhist centers in the northwestern inland of Indian subcontinent affected the orientation of Chinese Buddhism, together with destinations and itineraries of Chinese pilgrimages. As a result, the Sino-Indian Buddhist communications were dominated by the land route; therefore, historical documents concerning the maritime communications were inadequate.

Since 1980s, after the archaeological discoveries of Han Dynasties Buddhist images along Yangtze valley and southeastern coastal areas,² the question about through which route Buddhism was first introduced in China have been proposed, and answers have always been controversial.³ Although the ‘land route proposal’ had dominated so far, it really inspired the archaeological studies about the early Sino-Indian Maritime Silk Road. In the following archaeological discoveries and researches, from coastal cities to inland provinces, from Han to Tang Dynasties’ tombs and cellars, the exotics influenced artifacts, together with those mausoleum stone carvings of Indian style in suburbs of Nanjing, capital of the Southern Dynasties, etc., were brought into perspectives of studies on the maritime communications between China and India.

This study aims to make an historical review by integrating Chinese historical and archaeological resources related to Sino-Indian maritime communications during Han to Tang Dynasties, 2nd BCE to 10th CE. In this period histories of both of the two countries were complicated. China experienced the dynasties of Han (206 BCE-220CE), Three Kingdoms (220-280 CE), Jin (265-420 CE), Southern and Northern Dynasties (420-589 CE), Sui (581-618 CE), and Tang (618-907CE). Among them, the dynasties of Wu (222-280 CE), Eastern Jin (317-420 CE), Southern Dynasties (420-589 CE) chose communications by maritime route because of their locations in the south of China.

The maritime communications between Chinese Han Dynasties and Southeastern Indian

Chinese records on southeastern India

It was Emperor Wudi of Western Han Dynasty who had exploited the accesses to Indian regions by land and by sea, and then China had obtained initial information about India. The historical annals of Han

¹ For Buddhism in Han Period, see: Tang Yongtong, *Hanwei Nanbeichao Fojiao Shi*, (*History of Buddhism in Han, Wei, and Southern and Northern Dynasties*), revised edition, Beijing: Beijing University Press 2011, p. 28-49; Ren Jiyu, ed., *Zhongguo Fojiao Shi*, (*History of Chinese Buddhism*), Vol. 2, Beijing: Chinese Social Sciences Press 1981, p. 87-105.

² Wu Hung, ‘Buddhist Elements in Early Chinese Art (2nd and 3rd Centuries A.D.)’, *Artibus Asiae*, Vol. 47, No. 3/4 (1986), p. 263-303+305-352.

³ For a review, see Rong Xinjiang, “Land Route or Maritime Route: A Review to the Research on Approaches and Prevalent Areas of Buddhism in Han Period”, in Rong Xinjiang, *Zhongguo Zhonggu Shi Yanjiu Shi Lun* (*Ten Topics on Chinese Mediaeval History*), Shanghai: Fudan University Press 2005, p. 15-44.

Dynasties recorded several countries in Indian areas, such as Shen-du (身毒),⁴ Ji-bin (罽宾),⁵ Qian-tu (千涂),⁶ Huang-zhi (黄支),⁷ Tian-zhu (天竺), Pan-qi (磐起), Dong-li (东离).⁸ Shen-du and Tian-zhu were the names respectively called during Western Han or Former Han Dynasty and Eastern Han or Later Han Dynasty, and the name 'Shen-du' was apparently related to Hindu or the Indus R. Huang-zhi and Dong-li were also respectively called during Western and Eastern Han Dynasties, and both of them did not belong to Shen-du and Tian-zhu. The country Ji-bin, which could be recovered as Kaspīra, was the transliteration of Kashmir, Kāśmīra in Sanskrit.⁹ Qian-tu should be the transliteration of Gandhāra.¹⁰ Pan-qi and Dong-li were located in the east and southeast of Tian-zhu, i.e. respectively central and northern India. It is clearly regarded that Huang-zhi-guo was Kanchipura in the southeastern coast of India.

According to the Geography of *Han Shu*, since the time of Emperor Wudi, envoys from Kanchipura payed tributes with some specialties to Chang'an, capital of Han, through maritime route. During Emperor Pingdi's period (1-6 CE), Wang Mang (45 BCE-23 CE) sent emissaries to the king of Kanchipura for live rhinoceros to be contributed. The route started from southern shores of Han, the Barrier of Ri-nan Prefecture (日南障塞), Xu-wen and He-pu, along South China Sea and Bay of Bengal, finally arrived in Kanchipura and Si-cheng-bu-guo (已程不国 Sri Lanka). The route, as well as the navigation purposes, was also recorded in detail as below: there were four transferring countries, Du-yuan (都元), Yi-lu-mo (邑卢没), Chen-li (谶离), Fu-gan-du-lu (夫甘都卢), among which it took ten days' journey by walk from Chen-li to Fu-gan-du-lu; Chinese always exchanged products such as pearl, fine glass, rare stone, and marvelous goods, along their route, with their gold and worse silks; Chinese merchants often depended on the ships belonging to local inhabitants along the route; about journey's timing, it would take totally one year to reach Kanchipura and ten months to return to China's southern territories.¹¹

According to historical records, there were another two land routes to communicate Han with Shen-du and Tian-zhu, i.e. central and northern India, besides maritime route: the route via Tarim Basin, i.e. the Seidenstrassen, Silk Road, denominated by Richthofen;¹² and the route via the Southwestern tribes in China's southwest and Myanmar to eastern India, i.e. the so-called Southwest Silk Road. Due to restrictions of transportation conditions, their roles were different: Buddhism was obviously spread into China's inland through Tarim Basin, while the way of China - Burma - India was a non-governmental trade passage. As for the maritime Silk Road, it was a tribute road for Kanchipura.

During the reign of Emperor Hedi (89-105 CE), envoys of Tian-zhu arrived in Luoyang – capital of Eastern Han, through the land route with contributions for many times. After 159 CE during the reign of Emperor Huandi (147-167 CE), the maritime route to Han had been chosen as the favorite because of the interruption of land route after the rebellion of Han Empire's western tribe. It was recorded that both Tian-zhu and An-xi, i.e. Parthia, had commercial relations with Da-qin, i.e. Roma.¹³ The historical book *Liang Shu* (梁书), which had been compiled in Tang Dynasty, recorded that Tian-zhu, in Han Dynasties,

⁴ Sima Qian, *Shi Ji* (The Historical Records), vol. 123, Beijing: Zhonghua Book Company 1959, p. 3166.

⁵ Ban Gu, *Han Shu* (Han Annals), vol. 96, Beijing: Zhonghua Book Company 1962, p. 3884.

⁶ He Qinggu, *Sanfu Huangtu Jiaoshi* (Proofreading and Notes to Sanfu Huangtu), vol. 3: 'The Qingliang Hall of Weiyang Palace', Beijing: Zhonghua Book Company 2005, p. 156.

⁷ See *Han Shu*, vol. 28: 'Dili Zhi (Geography)', p. 1671.

⁸ These three countries were recorded in Fan Ye's *Hou Han Shu* (The Later Han Annals), vol. 88: 'Xiyu Zhuan (Biography of the Western Regions)', Beijing: Zhonghua Book Company 1965, p. 2921.

⁹ For discussion to Ji-bin in Han time, see Ji Xianlin, et al., *Datang Xiyu Ji Jiaozhu* (Notes to Datang Xiyu Ji), Beijing: Zhonghua Book Company 1985, p. 321-322.

¹⁰ See Zhang Xinglang, edited and noted by, Zhu Jieqin, revised by, *Zhong Xi Jiao Tong Shi Liao Hui Bian* (Corpus of Historical Materials Concerning to Sino-Western Communications), vol. 6, Beijing: Zhonghua Book Company 1979, p. 12.

¹¹ Geography of *Han Shu*, p. 1671.

¹² See F. F. von Richthofen, *China, Ergebnisse Eigener Reisen und Darauf Gegrundeter Studien*, Erster band, Berlin, Verlag von Dietrich Reimer, 1877, p. 506-507.

¹³ See Biography of Western Regions of *Hou Han Shu*, p. 2918-2919, 2921.

‘trade with Da-qin and An-xi through maritime way. Da-qin had many treasures including coral, amber, golden stone (lapis?), pearl, Langgan, tulip, styrax’. In the 9th year of Yanxi, 166 CE, reign of Emperor Huandi, the envoys of Marcus Aurelius Anthony (161-180 CE) arrived in Luoyang from the South China Sea. The merchants from Da-qin (Roma) often came to Fu’nan, Ri’nan, and Jiaozi.¹⁴

In *Hou Han Shu*, *Later Han Annals*, Kanchipura, which kept contact with Former Han Dynasty (206 BCE-25 CE), disappeared. In the eastern region of Tian-zhu, the country Pan-qi emerged, and the country Dong-li turned up in the southeast.¹⁵ It is also worth noting that, from *Hou Han Shu*, Tian-zhu believed in Buddhism (‘practice the doctrine of Buddha’), while Dong-li did not. According to all described above, it can be inferred that the destination country of maritime route during the Western Han period, Kanchipura, did no longer exist during the Eastern Han period and it was replaced by Dong-li country. Dong-li inhabitants did not believe in Buddhism, so it had not been spread thanks to this geopolitical change.

In summary, along with the opening-up of the two accesses to Indian areas by land and by sea in the 2nd century BCE, tributary envoys from India or through India entered into China used these two lines of transportation. For the maritime part, the researches about transportation lines and navigational conditions show that the route went along from Gulf of Tonkin to Indochina, via the country Du-yuan in lower Mékongk R. and Yi-lu-mo in the area around Bangkok, and landed on country Chen-li, area around Prachuap in Thailand, then entered country Fu-gan-du-lu, territory of Pagan of Myanmar, on the eastern coast of Andaman Sea, then across Bay of Bengal and finally arrived in Kanchipura. The back route started from Kanchipura to Sri Lanka, then crossed Indian Ocean and went eastward to Pisang in Sumatra, entered territory of Ri’nan Prefecture via the South China Sea.¹⁶ Considered in all respects, the main business of this route - which was composed by ports and harbors along its line, was a transit trade, and it connected Chinese southern port cities with administrative centres such as Jiaozi, Hepu, and Panyu (番禺 now Guangzhou) and southeastern coast of India. What the Han Dynasties demanded was the products from the areas around South China Sea such as pearl, spice, rhinoceros horn, ivory, and hawkbill, etc., as well as glassware from India or Rome. This enlightens the historical importance of trade network and Maritime Silk Road between China and India during Han time. This network was also connected with the Western Indian Ocean trade network through the Red Sea and the Persian Gulf to India in the same period.¹⁷

Archaeological discoveries of glass in northern shores of South China Sea

In the light of the historical recordings of Han Dynasties, it is remarkable that the fine glass, so-called the ‘Bi Liuli’, exchanged by Chinese with gold and silk, seemed to be a precious item among trade commodities, specially consumed by upper classes of Han Dynasties. The ‘Liuli’ was the glass; ‘Bi Liuli’ stood for the high quality of this specific type of glass. It was probably regarded as a substitute for jasper. In ancient Chinese, the words ‘Boli (玻璃)’ and ‘Liuli (琉璃)’ probably came from Southeast Asian languages, and those type of glasses were regarded as precious as jade.

These limited historical records encouraged archaeologists to undertake some deeper researches. In recent years, from tombs of Han time in Guangxi and Guangdong - especially from the places around the Tokin Gulf coast, more and more glass has been unearthed. These tombs’ masters were local elites’ members, and glass was used as representative of their social status and wealth, as happened with

¹⁴ See Yao Silian, *Liang Shu (Annals of Liang Dynasty)*, vol. 54: Biography of the Foreign Countries, Beijing: Zhonghua Book Company 1973, p. 798.

¹⁵ See Biography of the Western Regions of *Hou Han Shu*, p. 2921.

¹⁶ This is the authors’ revision to Han Zhenhua’s study, see his ‘A Voyage from China to Indian and Southeast Asia during the Seconde Century B.C. to the First Century A.D.’, in Han Zhenhua, *Zhongguo Yu Dongnanya Guangxi Shi Yanjiu (Studies of History of Sino-Southeast Asian Relations)*, Nanning: Guangxi People’s Publishing House 1992, p. 1-52.

¹⁷ In this aspect, these navigation records in Geography of *Han Shu* could be compared with those in *The Periplus of the Erythrean Sea*, written in the same century.

the special funerary articles. In Han Dynasties, these areas were the sub-administrative districts of prefectures and counties all belonged to Jiaozi Division (交趾州). As administrative centers, the capital cities were often set in place convenient for transportation, such as coastal and inland river shores.¹⁸

In Guangxi, the tombs of Han Dynasties have been found to be concentrated in the following three areas: Hepu, Guigang, and Wuzhou, where there were respectively the headquarters of prefecture of Hepu (合浦郡), Yulin (郁林郡) and Changwu (苍梧郡), administrated by Jiaozi Division. With the exception of one, all the other 150 tombs had funerary glass-ware, and those tombs' masters were mainly from local upper class. Among all the unearthed glass-wares, the majority was constituted by different types of beads used as jewelry: some of them were matched together with crystal and cornelian and turquoise beads. The very small part was an imitations of jade-ware, such as the *bi* (璧) used as a ritual object, rings, earplug and nasal stopper; there were also few vessels like cups and plates. The maximum number of glass beads was found in tomb numbered 5 (the Muzhuling Cemetery, Hepu County) in 1996, with 3405 unearthed glass beads.¹⁹ These beads could be generally divided into two types: the small-sized beads – in most part used for necklace, and the big-sized beads, used for hands' ornaments. 102 specimens of these glass-wares were tested and brought out seven systems in technology. According to experts' testing results, one part of specimens came from India, and it had been made with the so-called method of 'drawn making'; it produced beads in several shapes like hexagonal prism, quadrangular prism, double cones, double pyramids, etc. From the component analysis, this type of glass beads belongs to K_2O-SiO_2 glass system. Another group of glass beads came from Southeast Asia. This mentioned glass-making technology K_2O-SiO_2 was regarded as a traditional way of producing glass of India, Southeast Asia, South China and Southwest China, and it appeared not later than 3rd BCE.²⁰

In Guangdong Province, tombs which buried glassware are concentrated in the area of Guangzhou, Nanhai Prefecture's headquarter (南海郡) of Han Dynasties. Glassware was also found in Nanyue King's tomb (南越王) and in other upper class tombs. Besides some glass imitations of Chinese traditional jade *bi* and nasal stoppers, most of those glass wares were created into various shapes of beads, including the so-called 'Dragonfly eye' shape. A little part of glass beads belonged to the glass system K_2O-SiO_2 .²¹ This was similar with the one diffused in Guangxi. These glass beads were used as women's neck ornaments, and they were usually jointed with some other beads in materials of sardonyx, garnet, crystal, amethyst, and others. In the light of this, it can be state that this was the popular style at that time.

Thus, the question about glass trade around India Ocean – South China Sea deserved attention, along with the numerous glass' discoveries in the South of India, Sri Lanka, Thailand and Vietnam, and up until the Northern coast of South China Sea.²² It seemed that, according to archaeological discoveries, the trade of glass beads played a key role, including the 'drawn making' beads whose production center was in Arikamedu, India during Han time.²³ According to typological analysis, among the potash-silicate glass

¹⁸ See Tan Qixiang, ed., *Zhong Guo Li Shi Di Tu Ji (Collection of Historical Atlas of China)*, vol. 2: The Qin, Western and Eastern Han Dynasties, Beijing: Zhong Guo Di Tu Chu Ban She 1996, p. 35-36, 40-41.

¹⁹ See Hepu County Museum, Guangxi, 'The Excavation to Tombs of Han Dynasties in Muzhuling, Hepu County, Guangxi', *Kaogu (Archaeology)*, No. 2 (2007), p. 19-38, Plates IV-VIII.

²⁰ See: Xiong Zhaoming and Li Qinghui, *Guangxi Chutu Handai Boliqi De Kaoguxue Yu Keji Yanjiu (Archaeological, Scientific and Technical Study on the Glass Artifacts of the Han Dynasty Unearthed from Guangxi, China)*, Beijing: Cultural Relics Press 2011, p. 115-135; Gan Fuxi, et al., *Zhongguo Gudai Boli Jishu De Fazhan (Development of Chinese Ancient Glass)*, Shanghai: Shanghai Scientific & Technical Publishers 2005, p. 228-230.

²¹ See: Institute of Archaeology of Chinese Academy of Social Sciences, et al., *Guangzhou Hanmu (Excavation of the Han Tombs at Guangzhou)*, Beijing: Cultural Relics Publishing House 1981, p. 165, 238-239, 291-292, 351-353; The CPAM of Guangzhou, et al., *Xihan Nanyuewang Mu (Nanyue King's Tomb of the Western Han)*, vol. 1, Beijing: Cultural Relics Publishing House 1991, p. 133, 211-213, 251, 271.

²² See, Insook Lee, 'Glass and Bead Trade on the Asian Sea', Gan Fuxi, Robert Brill, and Tian Shouyun, ed., *Ancient Glass Research along the Silk Road*, World Scientific Publishing Co. Pte. Ltd., 2009, p. 165-181.

²³ Francis Jr., Peter, 'Beads, the Bead Trade and State Development in Southeast Asia', in *Ancient Trades and Contacts in Southeast Asia*. The Office of the National Cultural Commission, Bangkok, Thailand, 1996, p. 128-139.

wares from Guangxi and Guangdong, some of the beads and cups were likely to be imported from India, while others were likely to be more local products influenced by Indian glass technology. Another issue mentioned by experts is the glass wares of $\text{Na}_2\text{O}-\text{CaO}-\text{SiO}_2$, a technological glass system of ancient India, which had been affected by the Mediterranean as early as about 5th century CE in the northwest of the subcontinent and connected to land routes of the Mediterranean. This specific glass type had also been discovered in Han Dynasties tombs, and this means that it was probably an exotics imitation from either the Mediterranean or the Indian original one.²⁴ Since the administrative center in Southeastern Asia of Han Dynasties was in Jiaozi, i.e. present Hanoi, this situation undoubtedly had influenced the glass trade network and the distribution of glass business center; it is also to believe that Jiaozi and those Prefectures cities around Tokin Gulf, Hepu, Yulin, Changwu, and Panyu, i.e. Guangzhou, were become proper glass business centers, and the business was developed into inland's major cities from there.²⁵

With the development of archaeological discoveries in the coastal areas of South China Sea in Han time, there are some other kinds of relics to be focused besides glass. These following findings should be considered in perspective of early Maritime Silk Road: the terracotta or wooden boat's models and boat's images engraved on bronze drums or bucket unearthed from tombs of Han period in Guangzhou and Guigang, etc.,²⁶—which reflect water transportations around the coastal areas before the sea ship appearance; the heliotrope beads often found together with glass beads, which are regarded as a kind of exotic in early China;²⁷ the ivory and rhino horns, discovered from the tombs of Nanyue King and some other nobles;²⁸ the coral, crystal, amethyst, amber products made for precious ornaments; and the numerous incense burners as special funerary object, which reveals the popularity of incense fashion and an important question about the spices' source during the Han Dynasties, etc.. These goods amount was generally poor and regarded as a luxury in ancient China. Some of them were imported objects from Indian areas, and some came from the transit trade goods through India and Southeast Asia. All of these goods constituted a list of maritime trade in Han time. As the research of trade history revealed, only the glass trade was impracticable for the cross-border maritime trade.

The Sino-Indian communications in trade and Buddhism after the Han Dynasties

During the period from the Three Kingdoms to Tang Dynasty, 3rd-9th centuries CE, Chinese historical records concerning the Sino-Indian contacts were concentrated in Buddhist literatures. The development of Chinese Buddhism during this period was apparently helped by the maritime transportation and trade with India. Therefore, it could be said that the Buddhist communications through the two so-called approaches '*seeking the dharma*' and '*disseminating the dharma*' became the main ways. What led to this situation was on one hand, the development and spread of Buddhism both in India and in China; on the other hand, the development of maritime transportation between China and India, which greatly supported the travel of Buddhist monks, as the most important condition. The Buddhists obviously took advantage of the development of maritime trade network of India, Southeast Asia, China, and the later promoted the improvement of navigation.

²⁴ See, *Zhongguo Gudai Boli Jishu De Fazhan (Development of Chinese Ancient Glass)*, p. 228-230, 245-246.

²⁵ It is reported that the so-called Indo-Pacific beads, i.e. the 'drawn glass' beads, have been found too in thousands as far as Japan and Korea in the early centuries CE, and this could be suggested that the Southern China acted as a conduit for the movement of drawn glass beads of the Indo-Pacific type from production centers in Southeast Asia (perhaps also from India) to the Far East. C.f. Katsuhiko, O. and S. Gupta. 2000. The Far East, Southeast and South Asia: Indo-Pacific Beads from Yayoi Tombs as Indicators of Early Maritime Exchange, *Journal of South Asian Studies* Volume 16, 2000: 73-88.

²⁶ See: *Guangzhou Hanmu (Excavation of the Han Tombs at Guangzhou)*, p. 177, 246-247, 356; *Xihan Nanyuewang Mu (Nanyue King's Tomb of the Western Han)*, p. 50; Museum of the Guangxi Zhuang Nationality Autonomous Region, *Guangxi Guixian Luobowan Hanmu (Luobowan Han Dynasty Tombs in Guixian County)*, Beijing: Cultural Relics Publishing House 1988, p. 26-29, etc..

²⁷ See: Zuo Ming, 'The Etched Carnelian Beads Unearthed from China', *Kaogu (Archaeology)*, No. 6 (1974), p.382-385; *Guangzhou Hanmu*, p. 291, 352, 454; Zhao Deyun, 'A Study to the Etched Carnelian Beads Unearthed from China', *Kaogu (Archaeology)*, No. 10 (2011), p. 68-68.

²⁸ *Guangzhou Hanmu*, p. 128, 280.

In the three Buddhist books, *Gaoseng Zhuan* (高僧传 Biographies of Eminent Monks) written by the monk Hui Jiao of Liang Dynasty (502-557 CE), *Chu Sanzang Jiji* (出三藏记集 Compilation of Notes on the Translation of the Tripitaka) written by the monk Seng You in Liang, and *Xu Gaoseng Zhuan* (续高僧传 Continuation of Biographies of Eminent Monks) written by the monk Dao Xuan of Tang Dynasty, a number of Indian monks who arrived into China for propagating Buddhism through maritime route was recorded, especially in periods of the Southern Dynasties (420-589 CE). The well-known Bodhidharma, died in 536 CE in China, who was southern Indian and entered into the Southern Dynasties through maritime route by landing at Guangzhou, and was addressed respectfully as the first ancestor of Chinese Zen Buddhism.²⁹

As a research issue, it is noteworthy the transportation's conditions of Buddhist' communications. Like the Buddhist monks through the land route – who generally travelled by accompanying together with the traders along Silk Road, the monks travelled along maritime route needing to rely on those merchant ships coming and going China and India even more. In the Chinese historical annals, which always took delight in recording the events of tribute-envoys almost extinct, the envoys came from India and the Shizi country (师子国 Country of Lion), i.e. Sri Lanka, rode the merchant ships like the monks. It was the trade benefits that drove merchants and tribute-envoys going to China, and in the meantime met Chinese emperors' political ideal of 'acquiring local specialties, attracting people far away'.

According to historical recordings, the maritime route after 3rd century CE between China and India was the same as that one of Han period. By traveling along this route, the famous Indian monk, Jivaka, arrived in Luoyang by the end of Emperor Huidi of Jin Dynasty (291-306 CE) through Funan (扶南 now Cambodia), Jiaozi, and Guangzhou.³⁰ Another Indian monk, Guṇabhadra (394-468 CE), travelled through the sea from Sri Lanka, and landed at Guangzhou in 12th year of Yuanjia (435 CE). He had been accorded an official reception by the special envoy of the emperor and then to Jiankang (建康).³¹ Jiankang was not only the capital of the Southern Dynasties, but also a developed Buddhist center, which was as important as the Buddhist centers and capitals of the Northern Dynasties, Pingcheng (平城), Luoyang, Ye Cheng (邺城) and Chang'an (长安).

Besides the capitals, the port city Guangzhou also became a Buddhist center apparently because of its maritime trade with India. The most important Buddhist temple in Guangzhou, named Zhizhi Temple (制旨寺), now the Guangxiao Temple (光孝寺), had being built in Longhe's years, 362-363 CE, of Eastern Jin Dynasty, by a Tripitaka Dharma Master from Ji-bin, i.e. Kashmir, and during the years of Yuanjia, 425-453 CE, of Song Dynasty, Guṇabhadra had founded the precept platform, and in the 8th year of Putong of Liang Dynasty (527 CE) Bodhidharma lived in this temple when he came to Guangzhou.³² It was like Buddhist travelled along land routes and the monks along the maritime ones, taking also advantage of Buddhist temples as refuge places. This could be reflected from the journey of Chinese dharma-seeking monk Fa Xian (法显) of Eastern Jin Dynasty (342-423 CE). He had ridden the trade ships from Sri Lanka to Guangzhou in transit in Sumatra, but the encountering of storms had made them landing in Qingzhou, Shandong Peninsula.³³ These all above revealed the relationship between the spreading of Buddhism and maritime transportation. About the relationship between maritime transportation and Buddhism in Tang period, it could be reflected from the itineraries of the monk Yi Jing (635-713 CE), Guangzhou-Sumatra-India.

²⁹ Dao Xuan, *Xu Gaoseng Zhuan* (Continuation of Biographies of Eminent Monks), vol. 16: Bodhidharma, in Hui Jiao, et al., *Gaoseng Zhuan Heji* (Collections of Biographies of Eminent Monks), Shanghai: Shanghai Guji Chubanshe 1991, p. 231.

³⁰ Hui Jiao, written by, Tang Yongtong, annotated by, *Gaoseng Zhuan* (Biographies of Eminent Monks), vol. 9, Beijing: Zhonghua Book Company 1992, p. 364-365.

³¹ *Gaoseng Zhuan* (Biographies of Eminent Monks), vol. 3: The Translation of Sutras, p. 130-131.

³² See, *Foguang Dacidian* (佛光大辞典), vol. 3, Kaohsiung: Foguang Chubanshe (佛光出版社) 1988, p. 2127.

³³ See, Zhang Xun, annotated by, *Fa Xian Zhuan Jiaozhu* (Annotation of Biography of Fa Xian), Beijing: Zhonghua Book Company 2008, p. 142-147. This was the same route of the other Buddhist monk Budhabhadra, who also landed at Qingzhou. See, *Gaoseng Zhuan*, vol. 2: The Translation of Sutras, p. 69-71.

The most detailed records through maritime route from China to India were the books written by Fa Xian and Yi Jing. According to *Fa Xian Zhuan* (法显传 Biography of Fa Xian), also called *Foguo Ji* (佛国记 Record of Buddhist Countries), he started his return journey in Sri Lanka with a trade ship carrying two hundred passengers. He mentioned that there were rescue boats tied at the ship back, and their sailing on the sea always relied on the southeastern trade wind in summer, and the navigation by astrology, even if it had lots of rampant pirates. Once they had reached Sumatra, they transferred another ship to Guangzhou. The voyage almost lasted 50 days.³⁴ According to records of Yi Jing, in the 8th century CE, the lasting time of sailing from Guangzhou to Palembang of Sumatra had been shortened to about one month.³⁵

What kind of cargo did the trade ships load? It seems that this wasn't the attention for Buddhist passengers, even Fa Xian and Yi Jing did not make it clear. In *Hainan Zhuguo Zhuan* (海南诸国传 Biographies of Countries in South of the Sea) of *Liang Shu*, it mentioned that India had lots of treasures from Da Qin, i.e. Rome, such as the coral, amber, golden stone (lapis?), pearl, *Langgan*, tulip, styrax, through maritime trade with Da Qin and An Xi, i.e. Parthia, during Han time. Merchants from Da Qin often went to Funan, Ri'nan, Jiaozi to have transactions at the same time.³⁶ As we know, if these goods were collected together, they should be undoubtedly suitable to be a bulk of trade commodity, among them the tulips and styraxes were indeed the rare and needed spices for China. But we still did not know the detailed informations about cargos when ships returned from China, perhaps silk or natural silk like the cases in Han Period. From the aspect of trade cost, there were little possibilities for that the ships to return in no-cargo conditions.

Some archaeological findings belonging to this period provided a reference to the question. An example is from the great discovery in the Yongning Temple site (永宁寺), situated in the ancient capital city of Luoyang of Northern Wei Dynasty. From the site more than 150 000 glass beads have been unearthed.³⁷ These beads were produced by using the Indian technology of drawn-making, and seven of them have been tested as the glass system $\text{Na}_2\text{O}-\text{CaO}-\text{SiO}_2$, which is regarded as the glass bead technology system of Indian Ocean-Pacific. These seven beads, as a representation of all the drawn beads, were regarded as Indian glass beads imported with spreading of Buddhism.³⁸ The Yongning Temple had been built in the 1st year of Xi Ping (516 CE) and destroyed by fire in the 3rd year of Yong Xi (534 CE). It was the biggest Buddhist temple and belonged to the imperial family, and it had been donated with a large number of valuables. These glass beads from India could be the part of it.

In the Southern Dynasties, Indian Buddhism and Buddhist art influenced the religious believe and their culture. On the graveyards of emperor's mausoleums and of imperial tombs, it was generally placed large stone pillars and stone winged beasts. The pillars are in Indian style, and since they haven't been found in Northern China during the same period, it could be concluded that they were a pillar type introduced from India through maritime route. Otherwise, Buddhist lotus patterns have been found on the bricks constructing the tomb chamber, and the craftsman also used this pattern to decorate potteries. However, the Indian cultural element was not the only one, on the side of bricks there was also another pattern of warrior-lion appeared, it could be related to the Sassanian art. In Southern

³⁴ See, *Fa Xian Zhuan Jiaozhu* (Annotation of Biography of Fa Xian), p. 142, 145-146.

³⁵ See, Wang Bangwei, 'Yi Jing and Nanhai Jigui Neifa Zhuan: A Substitution of Preface', in Yi Jing, written by, Wang Bangwei, annotated by, *Nanhai Jigui Neifa Zhuan Jiaozhu* (Annotation to Nanhai Jigui Neifa Zhuan), Beijing: Zhonghua Book Company 1995, p. 18.

³⁶ Yao Silian, *Liang Shu* (Annals of Liang Dynasty), vol. 54: Biographies of Countries in South of the Sea, Beijing: Zhonghua Book Company 1973, p. 798.

³⁷ See, The Institute of Archaeology Chinese Academy of Social Sciences, *The Yongningsi Temple in Northern Wei Luoyang, Excavations in 1979-1994*, Beijing: The Encyclopedia of China Publishing House 1996, p. 136.

³⁸ An Jiayao, 'Ancient Glass Technology in the Wei, Jin and Southern-Northern Dynasties', in *Development of Chinese Ancient Glass*, p. 12-122.

Dynasties, there were other important archaeological discoveries of Sassanian relics, the three groups of silver coin found in Guangdong Province, two groups from tombs, another from a cellar.³⁹ These Sassanian silver coins were obviously used as silver object rather than monetary by their owners.

Conclusion

The maritime communication between China and India started since the time of Han Dynasties, and some activities relating to transportation, trade and tribute-envoy had been recorded in the Han Dynasties' official documents. However, to reconstruct the early Sino-Indian Maritime Silk Road's history, these recordings are undoubtedly insufficient. It needs hardly to be said that the research resources should be relied on archaeological discoveries along Maritime Silk Road from China to India.

It was very possible that the glass trade between India, Southeast Asia and northern shore of South China Sea emerged before the Han time, revealed by the archaeological researches. The glass was not the whole contents of Sino-Indian maritime trade. The Chinese historical annals also mentioned that Rome and Parthia joined this maritime trade system, and it has been proved by archaeological discoveries.

After Han Dynasties, maritime trade between China, India and Southeast Asia still existed, but the Buddhist communication became specially highlighted between China and India. This was based on the spread of Buddhism in south India, Sri Lanka, and Southeast Asia and on the development of maritime trade and navigation conditions. Buddhism in the Southern Dynasties had also flourished due to the maritime contact with India.

³⁹ See: Guangdong Provincial Cultural Relics Management Committee, *et al.*, 'Excavation of Ancient Tombs of Southern Qi, Sui and Tang Dynasties in Yingde and Lianyang, Guangdong', *Kaogu (Archaeology)*, No. 3 (1961), 139-141; Guangdong Provincial Museum, 'A Brief Report of Excavation to Ancient Tombs in Nanhua Temple, Qujiang, Guangdong', *Kaogu (Archaeology)*, No. 7 (1983), p. 601-608; Suixi County Museum, 'The Discovery of Golden and Silver Wares of Southern Dynasties in Suixi County, Guangdong', *Kaogu (Archaeology)*, No. 3 (1986), p. 243-246.

Australia's Kilwa Coins Conundrum

Ian S. McIntosh

Indiana University-Purdue University Indianapolis
E-Mail: imcintos@iupui.edu

During World War 2, a remote Australian beach was the scene of a most unexpected discovery. A Royal Australian Air Force serviceman stationed on the Wessel Islands in north-east Arnhem Land found five copper coins from the once prominent Swahili port of Kilwa in modern day Tanzania. In that same location four Dutch coins were also located. The Kilwa coins, which bear the names of various Sultans, were between 700 and 900 years old. The discoverer, the late Maurice Isenberg from Sydney, was manning a RAAF radar base that tracked the movements of hostile Japanese air and sea craft. (See McIntosh 2013) The regional capital of Darwin had been devastated in a Japanese attack in 1942. Advanced warning bases such as Isenberg's were a vital part of the Allied war effort. There were a considerable number dotted along the Arnhem Land coast of the Arafura Sea.

An Australian Geographic-funded expedition in July 2013 mounted by the author, an Australian anthropologist from Indiana University, and my team of archaeologists, historians and heritage specialists (collectively known as the Past Masters), sought to unravel the mystery of how these wafer thin copper coins from Kilwa, among the first coins ever produced in Sub-Saharan Africa, found their way to northern Australia. We were ably supported by a non-traveling team of researchers, including several noted numismatists, and we had the backing of the traditional Aboriginal owners of the Wessel islands, whose oral history pertaining to foreign visitors would prove very useful in developing our various hypotheses regarding the deposition. (McIntosh 2013, 2104a, b)

Our principle research questions are situated within a current debate in Australian archaeology and anthropology regarding what is called the 'long model' (See Wesley, O'Connor & Fenner, 2016). In this model, contact between north Australian Indigenous peoples and non-Indigenous peoples is of long duration, greater than two hundred years, and well before the 18th century start date of Macassan trepanging – Australia's first international export industry. Specifically, in this paper, I ask: Was there a direct link between Kilwa and north Australia? And, were Australia's Indigenous peoples implicated in the ancient Indian Ocean trading network, also known as the Maritime Silk Road, which linked East Africa with Arabia, Persia, India, China, and South-East Asia? The very thought of pre-colonial Australia having medieval links to southern Africa generated considerable news coverage in 2013 with team members undertaking live to air interviews on radio and television in multiple places including South Africa, Spain, United Kingdom, Czech Republic, New Zealand and Russia. There was also detailed reporting in the print media across Indian Ocean, in particular in the United Arab Emirates and India. One positive outcome of this news buzz was further funding, this time from the Office of HanBan in the Chinese Ministry of Education. This support allowed the Past Masters, in partnership with Axum University, to host a major conference in Ethiopia exploring the ancient trading links between East Asia and East Africa, including Australia. This conference, which was the subject of a feature article in the 'New African Journal' (See Abraham, 2015), attracted senior researchers from Tanzania, Italy, China, Australia and the USA, and helped shed light on the considerable movements of peoples across the Indian Ocean prior to the rise of the European powers, in particular Portugal.

The Past Masters approached the Kilwa coin conundrum on three fronts: 1. An examination of the history of international trade across the Indian Ocean and to the immediate north of the Wessels Islands. 2. A review of non-Aboriginal artefacts found along the North Australian coastline. 3. An analysis of the oral history and mythology of the Yolngu (Aboriginal peoples of north-east Arnhem Land).

To the north of Australia lie Indonesia's fabled Spice Islands, once the sole source of the world's nutmeg, mace and cloves. Here, the ports of Ambon and Banda would become vast entrepôts attracting traders from far and wide for a whole range of exotic products. In nearby Malacca, another entrepot, Portuguese apothecary Tome Pires reported trade agents from Kilwa, Cairo and Aden being active in the early 1500s (See A. Cortesao, 2011). So at one level, finding a Kilwa coin in Australia might not seem so unusual, given this intensity of foreign activity in the region.

In the search for answers, we understood that the key to success was in heritage detection and conservation training for Yolngu sea rangers and members of Norforce, an Australian government surveillance and reconnaissance unit. These are the men and women who manage the extensive and remote north Australian coastline, including the Wessel Islands, on a day-to-day basis. We wanted to equip them with the knowledge and skills necessary to make the types of discoveries that really could lead to a major reconsideration of Australia's past. Often the clues are not easy to spot. An appreciation of various forms of ballast, for example, can help distinguish the point of origin of non-indigenous rocks found along the strand. Basalt, limestone or yellow brick, for example, might indicate past visitors from Indonesia, Portugal, or the Netherlands. Accordingly, two well-attended training workshops, as well as community consultations and field exercises, were held in 2013 and 2014 in both the regional center



FIGURE 1. KILWA COIN RESEARCH TEAM EDUCATORS IAN MCINTOSH AND MIKE HERMES, WITH MEMBERS OF NORFORCE DURING AN ARCHAEOLOGICAL TRAINING SESSION IN 2013 AT SKI BEACH NEAR NHULUNBUY, N.T.

of Nhulunbuy (Gove) and in the Aboriginal village of Galiwin'ku (Elcho Island) in order to build up an appreciation for this process of 'collaborative history-making'.

In this paper, I will review our findings to date in order to shed light on a number of hypotheses. Australia, rather than being this isolated land mass that would only be 'discovered' by Europeans in 1607, like the Americas by Columbus in 1492, appears to have already been well known in the international trading networks prior to the 1600s. What attracted these traders? As I will describe later, there were few products of genuine and sustaining interest until the mid-1700s when the high value trepang (beche-de-mer) trade commenced, attracting over a thousand Macassans from Sulawesi each year for upwards of 150 years. (See Macknight 1976) The Macassans would sell their produce to the Chinese, for whom trepang, an aphrodisiac, had special value as a wedding gift. The red rock hematite, found in great abundance on Arnhem Land shores, was an item of interest to traders across the Indian Ocean, and Aboriginal oral history speaks of its utilization in the manufacture of iron tools (See McIntosh 2015). North Australia may also have been a source of slaves for the Portuguese, Dutch, Macassans and Chinese during the heyday of the spice trade. The historical record indicates that the Macassans, and in particular the Bugis, were greatly feared, and their slave raids precipitated the building of protective forts in places such as Timor and elsewhere in what is now eastern Indonesia. (See O'Connor, McWilliam et al. 2014; Lape 2003) Additionally, the remote Wessels Islands appear to have been a port of refuge for brigands attacking the East Indies traders. After an attack, they might flee to places such as the Wessel Islands and hold up there for an indefinite stay. These islands, now vacant, contain vast rock shelters that are alive with cave paintings of boats of all descriptions, the study of which may shed further light on the region's past.

What our hypotheses reinforce is that Aboriginal people were implicated in the vast maritime trade network. Determining the extent of Aboriginal agency is a work in progress, but it is clear that this contact, over millennia, has profoundly influenced Aboriginal lives and worldviews. The presence of Kilwa coins on Australian shores sends a strong message that Australian history, with its focus on British explorer Captain James Cook's 'discovery' in 1770, is in dire need of revision.¹

Banda, and the Indian Ocean Context of Discovery

Following the ground-breaking work of historian and archaeologist Campbell Macknight, Australian primary and high school curriculums today make mention of the extended visits to Arnhem Land of Macassans, trepang fishermen hailing from the island of Sulawesi. They had a long and fruitful trading relationship with Arnhem Land Aboriginal people in the days prior to European colonization (See Macknight 1976, 2011). My research over a number of years on the topic of these relationships has revealed a range of even earlier connections, with groups collectively known as pre-Macassans. (McIntosh 2015) In terms of the Kilwa project, Yolngu oral history and mythology revealed strong links to the island of Banda, the fabled spice island that was the subject of attention by foreign traders over many centuries. Banda lies about 700 hundred nautical miles north-west of the Wessel Islands and it features significantly in Yolngu songs, personal names, mythology and oral history. In other words, we must not limit our speculation on the origins of the Kilwa coins to just the Macassan era, which lasted only from 1750-1907. We need to take a broader perspective that encompasses the rich history of South-East Asia and beyond.

Before the rise of the European powers and their quest for world domination, the Indian Ocean was alive with the movement of peoples, goods, ideas, and religions (Buddhism, Hinduism and Islam). These

¹ In 2016, Australia was still debating whether Australia was settled or invaded in 1788, and whether Captain Cook was merely an explorer, or an agent in the destruction of Aboriginal lives and livelihoods. See *Daily Telegraph* (2016)

early trade routes have been the subject of considerable study.² There were trans-oceanic migrations of Austronesians from central Indonesia to Madagascar, an intercontinental slave trade of vast proportion from the Zanj coast and hinterland to what is now Iraq, and a significant transoceanic network of trading ports from Kilwa to Guangzhou. Calicut on India's west coast, for example, was a major hub immediately before the Portuguese invasion in the 1500s. A few of the major sources of information on the Indian Ocean trade networks include:

1. The Greco-Roman map from the first century CE called the *Periplus of the Erythraean Sea* records the observations and experiences of a merchant and shows the extent of the trading network that would become known as the Maritime Silk Road. This map indicates the presence of ports frequented by Romans, Arabs and Persians along the east coast of Africa as far as Rhapta in what is now Tanzania, and across to India and Sri Lanka.
2. The Cairo Genizah, which contains some 300,000 Jewish manuscript fragments, describes the movements of traders from the Middle East to North Africa and beyond beginning in 870CE. (See Goiten and Friedman, 2008)
3. The *Jingxingji*, a Tang Dynasty military report compiled by Du Huan from China in the 8th Century CE describes Red Sea ports and the African hinterland. (Liu, 2014) In addition, several Arabic texts from the 800s-900s describe the movement of trade from the Persian Gulf to China through a series of local merchants. In those days, direct sailing with a safe return was almost unheard of (Agius, 2013, 90; Phillips, forthcoming)
4. James De Veere Allen's classic text on Swahili origins locates early Swahili trade routes from the east African coast that follow the monsoon to and from Arabia and Persia, and also an earlier purported 'Cinnamon Route' from South-East Asia, linked to the migration of peoples from Borneo and the Makassar Strait to Madagascar perhaps as early as two thousand years ago.³ (1993, p. 55)
5. The large-scale transfer of Indian culture to South East Asia and the development of what Berenice Bellina (2014) refers to as the 'South China Sea Network Culture', dates back to the first millennium BCE.⁴ By the late centuries BCE, South East Asia was already a part of a world trading system linking the Mediterranean and China (Bellina 2014). For the first millennium CE, Stephen Haw (2017) and Wang Gungwu's (1958) provide comprehensive accounts of the maritime routes between China and the Indian Ocean during the 2nd and the 9th centuries. Chinese goods bound for Arabia and Persia would be unloaded in a region called Funan (which encompasses Thailand and Vietnam) and transported overland across the Isthmus of Kra to the Andaman Sea where other ships would transport the goods to their destinations. By the 5th century CE, this passage was displaced by the sea route via the Sunda Strait between Sumatra and Java. It was only later that the Straits of Malacca became the predominant route of trade vessels. (See also Rosser and Imray, 1867)

Before its sacking by the Portuguese in 1505, and especially in the 12th century, Kilwa was among the most prosperous Swahili ports on the East African coast, and the coins that were found in Australia bear the names of Sultans who ruled over Kilwa, and also Pemba, the Mafia Islands, Comoros, and Zanzibar. One Wessel Islands coin, for example, bears the inscription Sulaiman ibn al-Hasan ('May he be happy. Trusting with the Master of Bounties. He is glorious'). The coins are the oldest foreign objects ever found in Australia and in archaeological terms, they are priceless, but they also represent a conundrum.

² An additional consideration is that various cultivars (banana, yam, and taro) had crossed the Torres Strait into northern Australia 2,000 years (if not more) before European contact.

³ The date of the extinction of the Elephant Bird in Madagascar may provide a clue to the date of this migration (pers. com. Stephen G. Haw 2016)

⁴ See also Bellina and Glover (2004) and Yang (2004). Dong Son bronze drums from Vietnam were being exchanged along the long established trade routes from this period. (Bellina 2004).

The Wessel Islands Kilwa coins have only been found in two regions beyond the immediate vicinity of their manufacture in East Africa: one in the ruins of Great Zimbabwe; and one in the Dhofar region of Oman on the Arabian Peninsula. The Wessel Islands' Dutch coins, by comparison, have been found along the Arnhem Land coast in association with the trepang (beche de mer) fishing camps of the Macassans. More than 8000 kilometres from Kilwa, on the far side of the Indian Ocean in the Arafura Sea in north Australia, the curious Kilwa coin cache of the Wessel Islands is not easily explained.

Apart from the fact that Kilwa sailors were held in high regard, there is a dearth of information about early Kilwa seafaring (See Pollard, Bates et al. 2016). It is apparent, however, that whatever boats the traders of Kilwa did possess a thousand years ago, these had limited capacity for open sea travel (Hall 1998). Consequently, the Arab sea trade became an early focus of my examination of the links between Kilwa and Australia. The pioneering work of George Hourani (1951) on the golden age of Arab seafaring demonstrated the extent of the Arab accomplishments though few details survive to substantiate what was obviously a grand tradition. Two instructive shipwrecks that speak of the ancient nature of journeys that linked the Middle East to the Far East were from China's Tang Dynasty period circa 800s CE. An Arab, Indian or possibly South-East Asian ship carrying porcelain and a wealth of hand-crafted artifacts was shipwrecked at Belitung Island in Indonesia. Cargo, coming from the opposite direction, perhaps originating in Arabia and then off-loaded for resale in Sumatra or Java and then heading for China, was wrecked near the major historical port of Quanzhou in China. Recovered were trade products from Arabia and Persia and the Horn of Africa, like frankincense and myrrh, 'Dragon's blood' from the island of Socotra, and also ambergris (See Hall 1998; Guy 2010).

The circumstances whereby the territory to the immediate north of Australia became associated with this extensive corridor of trade is thus well known, if not so well documented. The drawing power of the islands just a few day's sail north of Arnhem Land (from where the Kilwa coins were found), was rare spices: cloves from Ternate and Tidore, and nutmeg and mace from Banda. Great profits rewarded the trader on the maritime silk route, and as early as the first century of the Common Era (CE), cloves were being moved via a series of hands through South-East and South Asia all the way to Rome. (Bellina and Glover 2004, Ellen 2003, Frederickson 2000) There are numerous reports, as well, of other spices like sandalwood and cinnamon reaching Egypt and ancient Syria.

By most accounts, it was Indian traders bringing Buddhism and Hinduism into the Indonesian archipelago who, on their return voyages, first introduced cloves, nutmeg and mace to international markets. There are no firm dates for the arrival of foreign traders to the Arafura Sea and the Spice Islands, but Dobson (2014, p.119) reminds us that the 'Book of Routes and Kingdoms', compiled by the Persian cartographer Ibn Khurdadhbih in 844-8 CE, specifically mentions the islands of Maluku (including Banda) as being fifteen days sail from Java. (See also Lape 2000, p.14). By this period, Arabs and Persians were fully engaged in the trade along the Swahili coast as far south as Kilwa and were also active, at least as far as Srivijaya in Sumatra, in the long distance trade in spices that originated from Banda (See Haw, 2017). Gujaratis from India and the Chinese were also actively involved. In the latter case, the imperial demand for 'useful and valuable goods' had provided a major impetus to Banda's growth and standing as an international emporium. Islam would spread all along these Indian Ocean trade networks, from Kilwa to Banda and even northern Australia. (See McIntosh 2015)

In the early 1500s, the island kingdoms of Ternate and Tidore were rival trading ports each with their own extensive spheres of interest. Tidore's domain to the east included Papua, Aru and Tanimbar Islands, and Ternate's domain included Sulawesi (and what was then the small port of Makassar) and Timor. But it was to Banda that both sent their trade goods for sale to the world (Hanna 1991). According to Dobson (2014, p.123) Australian trade products during the pre-Macassan period might have also been sent to Banda.

The name 'Banda' is derived from the word for port and is sometimes translated as 'emporium' (Ellen 2003, p. 65). Islanders from what is now Indonesia's Maluku province would travel to Banda bringing with them their own unique products like Bird of Paradise feathers. Indeed, commentators such as Tome Pires observed that Banda attracted merchants from as far as Papua and Tanimbar who were interested primarily in items such as cloth (Ellen, 2003, p.65). One picul of trepang, for example, might be used to purchase a sarong (Dobson, 2014, p.124).

By the 1660s the Dutch were in the ascendancy and had all but displaced the Portuguese as the primary power throughout the Indonesian archipelago. They saw the rising strength of the rapidly growing Islamic state of Makassar (including the Kingdoms of Gowa and Tallo) as a direct threat to their regional trade monopoly. In a strategic alliance with the Bugis of Bone and also Ternate, they defeated the military forces of Makassar in 1667. The Dutch would then go on to make this city their trade hub for eastern Indonesia; a realm of influence that included Banda and other Maluku islands. It was in this period that Yolngu and Macassan oral histories describe how defeated Gowa and Tallo leaders took refuge in remote north Australia – in the vicinity of the Wessel Islands – to consider their future. During this sojourn, which lasted upwards of twenty years, the Macassans are said to have discovered the trepang that they would later harvest, beginning in the mid-1700s. At this time, if not before, the Yolngu would learn about Banda and the other islands of Maluku, and may well have visited the great emporium. This is strongly suggested in Yolngu oral history, and in ritual songs and ceremonies with strong Islamic and foreign influences. (See McIntosh 2015) As I have documented previously, Banda is referred to in sacred Yolngu narratives and also in personal names as Bandawee ('the source of traditional information'), Banda and Bandayil ('the land of the dead'), and Bandaynga ('where the big people come from') (McIntosh 2015).

At the very least, what we see in this short exposition is an emerging picture of Australia's Indigenous peoples becoming familiar with worlds beyond their shores and knowing something of the dynamic political and religious struggles that were unfolding just to their north.

Potential Reasons for Australian Coastal Trade and Wessels Connections

The 'Wessels' are a 120km long chain of islands that were 'discovered' in 1623 by Captain Jan Carstenszoon of the Dutch East India Company in his ship the 'Arnhem', though on his charts they are known as the Islands of Speult. These same islands are shown but not named on Abel Tasman's 1644 map of his discoveries in north Australia. The English explorer Matthew Flinders writes of some charts showing the chain as one large island called 'Wessel's Eylandt', and he endorsed this place-name in his mapping of the northern coast of Australia in 1802-3. The Wessels form a great arc north from Arnhem Land's Napier Peninsula towards Papua New Guinea. The island chain features rugged sandstone plateaus, rocky cliffs and sandy bays, as well as extensive areas of native grassland, eucalypt woodlands, paperback forests and mangroves. For months at a time the islands are buffeted by the north-west trade winds from Timor, Tanimbar and Aru and from time immemorial they would have acted as a type of barrier, or a great catching mitt, for all the Arafura Sea traffic blown south of their intended course.

The deposition of the Kilwa coins in the Wessel Islands raises many questions about early deliberate and accidental visitors to Arnhem Land. Who were they and why were they so far south of the major trade routes? The first and most obvious reason for travel was European exploration, and Portuguese forays into Arnhem Land should be considered a strong likelihood. By 1519CE the Portuguese had established a major trading post and fort in Ambon, near Banda. Theoretically, engagement east of here would have been seen as an invasion of the Spanish sphere of influence and invite a conflagration at home. Exploration in places like Australia would have thus been conducted in secrecy, but may have been extensive. Indeed, English explorer Matthew Flinders in his report 'A Voyage to Terra Australis',

concedes: 'It may... be admitted that a part of the west and north west coasts [of Australia], where the coincidence of form is most striking, might have been seen by the Portuguese themselves, before the year 1540, in their voyages to and from, India.' (Page VI, Volume One, 1814/1966) As Stephen Haw (pers. comm. 2016) argues, in the period of Portuguese expansion, they may have reached Australia without realizing that this was *Terra Australis Incognita*. At this time it was comparatively easy for seafarers to establish latitude, but a practical method of establishing longitude with any degree of exactness did not emerge until the eighteenth century.

A second reason was that north Australia may well have been a source of trade goods for the international marketplace. The third was that the 'Top End' of Australia could have been a source of slaves for foreign merchants in the trading outposts of south-east Asia and beyond. Another reason was the random unexpected arrivals of outsiders brought about by accidental or other means, as I discuss later.

In these early years Australia represented to many an 'apolitical' region, in that was not specifically claimed by any colonial power, kingdom or foreign nation – although there is a map of unknown derivation or age that shows northern Australia coming under the influence of the kingdoms of Gowa and Tallo (Makassar) during the 1600s. Until British sovereignty in 1770, in places like Arnhem Land, mariners of diverse origins would negotiate on a case by case basis with local Indigenous groups for entry and access. While today the recognition of Yolngu sea rights is gaining momentum, oral history shows that the waters of the Arafura Sea were free for all to travel, even those whose motives were less than salubrious.

As stated, Dutch explorers are credited with the discovery of the north and west Australian coasts, and many Dutch mariners were wrecked enroute to Batavia in the early 1600s. Tracking east from the southern tip of Africa on the 'Roaring Forties', they would sometimes overshoot and perish on the desolate West Australian coast. They had no interest in settling Australia or trading with the indigenous Australians, dismissing them in the same manner as the English buccaneer William Dampier who described them in 1697 as the most miserable people on earth. Captain James Cook, venturing on to the east coast of Australia in 1770, brought with him Enlightenment ideas of the 'Noble Savage', but still no real recognition that these were people with whom he could parley.

However, there are many potential reasons why north Australia may have been of interest to international traders, but there is no solid evidence of deliberate and sustained interest until the mid-1700s, although our research has opened the door to a possible reevaluation of this conclusion. Below is a brief overview of the possibility of early contact and trade prior to the Macassan trepang industry:



FIGURE 2. COASTLINE, NORTHERN TERRITORY, AUSTRALIA, WITH THE WESSEL ISLANDS TO THE FAR RIGHT.

1. Slavery. There were persistent reports of Portuguese slavers (possibly Portuguese Timorese or Topasses) being active on the Tiwi Islands of north Australia during the period of European colonial expansion in South-East Asia. According to Searcy (1912), Tiwi Islanders' hostility to outsiders – including towards residents of the first British settlement in the north at Fort Dundas in 1824 – was a direct consequence of the raids by 'Malays'. They would refer to the Islanders as 'Amba', meaning slaves. In Timor in 1840, English navigator George Windsor Earl heard the Tiwi Islands being described as a major reservoir of slaves for Portuguese slave traders (Ganter 2006, p. 7). Apart from Timor, Ende in Flores was a focal point of the regional slave trade (Sutherland and Reid 1983 p. 273). Most commonly, it was South-East Asian slavers who were responsible for such depredations across the archipelago. Slaves were both a source of status in the slavers' home ports and also a source of profit when sold to Portuguese, Dutch and Chinese merchants. The island of Banda was by 1621 an example of the American-style slave plantation. The Dutch had exterminated, expelled or enslaved the entire local population. (Hanna 1991)
2. Indigenous Indonesian whale hunting. Today, the practice of traditional whale hunting is limited to the Solor Islands, the place where the Portuguese first established themselves in the early 1500s, but this practice may have been much more widespread. Yolngu oral history and mythology, as I detail later, has many references to whale hunting peoples of the north, who were known as Wurumala and Gelurru etc, who were said to be active in north-east Arnhem Land. The recording by the Past Masters of a Wessel Island rock painting of a traditional whale hunting vessel provides the first solid evidence of what may have been sustained contact.
3. Piracy/Refuge. Were the 'off the radar' Wessel Islands a place of retreat for pirates preying upon the rich flotillas on their way in stages to and from Arabia, Persia and China via the rich port of Banda? Piracy was rife in the archipelago, in particular the Sulu Sea and also Papua and raids on foreign ships were common.⁵ (Both supply ships for Fort Dundas, for example, were captured and sunk in 1825 by Malay pirates at Babar Island near Timor). Seasonal winds across the Arafura Sea would have facilitated contact of this nature. Before the introduction of European rigging that allowed 'tacking', south-east Asian boats relied on prevailing winds to a much greater extent. Square-rigged ships could only sail to within a few points of the wind. (See Haw, n.d.:22, and Harland, 1985:62-63). Therefore, one might sail from Sulawesi to Papua downwind, but to get back one must sail down towards Arnhem Land and then turn to the north-west to return home. So West Arnhem Land, in particular the Tiwi Islands and Coburg Peninsula, might very readily have seen regular contact. The remote Wessels Islands, however, may have been sought out because of their very isolation.
4. Pearls and pearl shell. Dobson (2014:142) describes how the pearl-rich coastal waters of northern Australia include the species *Pinctada maxima*, the oyster that produces the large and valuable 'South Seas Pearl'. Pearls and pearl shell were traded by Aboriginal coastal groups for Macassan iron, tobacco and alcohol. The Macassans would then trade the pearl shell to the Chinese for use in their arts and crafts industries. This may have been an item of interest for early visitors to Arnhem Land,
5. Turtle shell. The shell of the Hawksbill turtle (*Eretmochelys imbricate*) was a popular item of trade across the Indian Ocean and this species is prevalent across the north of Australia. According to E. H. Warmington's *The Commerce between the Roman Empire and India*, 'tortoiseshell' is said to have come into general use by Romans for the veneering of furniture in the 1st Century CE. The best came chiefly from the eastern Indonesian archipelago especially between the east coast of Sulawesi and New Guinea. (1928: 166).
6. Hematite (Ironstone). Interest by Macassans in the coastal hematite outcrops of Arnhem Land has been noted in the literature (See Macknight 1976). In an earlier paper, I speculated that foreign

⁵ See Kleinen and Ossewiler (2010).

visitors to the coast may have used this resource in the production of iron tools, anchors and weaponry. (See McIntosh 2015). In the Wessels Islands, near to where the Kilwa coins were found, there are specific places associated with iron manufacture that correspond to sites with a rich abundance of the red rock that was in demand across the Indian Ocean.⁶

7. Timber and Palm Oil. Historian Campbell Macknight (1976) identified the cypress pine (*Callitris intratropica*) as an Arnhem Land resource that was traded internationally. The floor boards of some of the old houses of Makassar that I have visited are adorned with Arnhem Land cypress. The Screw Palm 'pandanus' was also a critical commodity centuries ago, before the advent of large-scale whaling, as a source of oil for lamps and candles. In addition, Australian Eucalyptus hardwoods were a useful raw material, and Sandalwood (*Santalum spp*), which has been sourced to Marchinbar in the Wessel Islands, was also targeted by traders, but there is no evidence that specific voyages were undertaken to seek out such resources. Rather, like shark fin or medicinal bezoar stones, they were a byproduct of visitation for other unspecified purposes.

Physical Evidence of Contact in North Australia

The following examples provide an overview of the physical evidence for the interaction of Australia's indigenous peoples and coastal visitors in the pre-colonial and early colonial periods. The Past Masters website (www.pastmasters.net) created by the group's co-founder, heritage consultant Mike Owen, contains a number of references to other unexplained foreign objects found in the Northern Territory and beyond.

The Wessel Islands Coin Horde

The circumstances surrounding the discovery of the Kilwa coins are not in dispute. In early 1945, the late Maurice (Morry) Isenberg of the 312 Radar Unit was stationed at Marchinbar Island, in the northern part of the Wessels chain. Isenberg would spend his spare time fishing and bushwalking. One day, whilst fishing, he saw four green circular objects lying in the sand, about one meter below the high water mark. He picked them up and poked around in an area of about four square meters, finding five more. Having no interest in coins at the time, he put them in an airtight match tin; this went into his kit bag and returned with him to the mainland. (Freeman-Grenville 1984, Mira 1993:2) In 1979, Isenberg rediscovered the coins, cleaned them, and sought help in their identification. Through a series of hands the coins came into the possession of noted numismatist Bill Mira, who could easily identify the four V.O.C. (Dutch East India Company) coins with one dating back to 1690. For the other coins, however, he relied upon the diagnosis of specialists in numismatics from Brisbane (R. Domrow) and the British Museum (N.M. Lowick) in confirming an East African connection. The coins were then donated to the precursor of the Powerhouse Museum in Sydney, where today they lie in storage away from the public eye. The register of the Powerhouse Museum states that the Kilwa coins and the Dutch coins found by Isenberg on the Wessel Islands were deposited in two waves, hundreds of years apart, though this is not substantiated.

The Powerhouse Museum describes the five Kilwa coins as follows:

- N21359-5 Coin, Kilwa Sultanate (East Africa), Falus, copper alloy, Sulaiman ibn al-Hasan (c. AD 1294-1308)
- N21359-6 Coin, Kilwa Sultanate (East Africa), Falus, copper alloy, Sulaiman ibn al-Hasan (c. AD 1294-1308)
- N21359-7 Coin, Kilwa Sultanate (East Africa), Falus, copper alloy, 'Ali ibn al-Hasan (c. AD 1480-1482)
- N21359-8 Coin, Kilwa Sultanate (East Africa), Falus, copper alloy, 'Ali ibn al-Hasan (c. AD 1480-1482)
- N21359-9 Coin, Kilwa Sultanate (East Africa), Falus, copper alloy, Al Hasan ibn Sulaimam (c. AD 1482-1493).

⁶ An XRD (X-Ray Diffraction) analysis needs to be undertaken to determine the iron content of Arnhem Land hematite.



FIGURE 3. TWO OF THE FIVE KILWA COINS FOUND ON MARCHINBAR IN THE WESSEL ISLANDS.

The Kilwa coins were examined by two members of the Past Masters research team, well-known Australian numismatists Peter Lane, and also John Perkins from the United Kingdom. One of the foremost authorities on Kilwa and Kilwa coins, Perkins was able to provide the Powerhouse Museum with a revised estimate for the date of the coins from 1150-1330CE, 100-200 years older than previously considered. The names of two Kilwa sultans were inscribed upon the coins, namely Suliman ibn al-Hasan and Ali ibn al-Hasan.

All five Kilwa coins are almost identical in terms of condition, composition (copper alloy), weight, and therefore value. The four Dutch coins found in the vicinity of the Kilwa coins are of European origin and of somewhat earlier manufacture than other Dutch coins found in north Australia, the majority of which were minted in Batavia (Jakarta) The following detailed information on the mint locations and dates of each coin is found in the Powerhouse Museum files:

- N21359-1 Coin, Netherlands, Dutch East India Co., Doit, copper alloy, Gelderland Mint, 1690;
- N21359-2 Coin, Netherlands, Dutch East India Co., Doit, copper alloy, Zeeland Mint, 1724;
- N21359-3 Coin, Netherlands, Dutch East India Co., Doit, copper alloy, Zeeland Mint, 1784;
- N21359-4 Coin, Netherlands, Dutch East India Co., Liard, copper alloy, Liege Mint, 1745⁷

There is therefore a 300+ year gap between the latest of the Kilwa coins and the earliest of the Dutch coins. According to Perkins (pers. comm. 2015), it would have been unusual for Kilwa coins to have played a part in international trade activities as they were a very local phenomenon. Such coins are still regular surface finds along the Swahili coast and at some sites they can be found in abundance. It is possible, however, that it was the copper itself that was of value and in demand in international trading circles, especially in the spice trade, rather than the local value as ascribed to them in Kilwa, a point that I will return to later.

⁷ Feenstra (2014) describes how the Dutch East India Company (VOC) introduced 1.1 billion copper doits to Java as the economy in the East Indies shifted away from subsistence farming.

Wessel Islands Rock Art

One of the more startling finds of the preliminary expedition to the Wessel Islands was the series of rock art shelters with a range of red, yellow and white images depicting what appears to be waves of foreign visitation, including sailing ships and men with yellow trousers, large brimmed hats, and possibly carrying firearms. These are often superimposed on totemic images of various land and sea creatures, like bandicoots, crocodiles, whales and sharks, and also the two-headed snake linked to the sacred Dreaming narratives of this area.

There is also the 'Cave of the Crew' depicting a row of men with their arms akimbo or holding their hats in the air. Initial speculation was that this represented the crew of a Japanese pearling lugger, for such boats were common in these waters in the 1920s and 1930s. Our latest thought is that it is



FIGURE 4. ROCK ART AT JENSEN BAY, MARCHINBAR, WESSEL ISLANDS DEPICTING A SAILING CRAFT AND TOTEMS.



FIGURE 5. JENSEN BAY IMAGES OF HUMAN FIGURES, POSSIBLY JAPANESE, DATING FROM THE 1930S IF NOT EARLIER.

a representation of the crew of Mathew Flinders' 'Cumberland', which anchored on the southern portion of Marchinar in 1803.

The most significant find to date was at Cape Wessel, where a D-Stretch image of a very faded rock art image revealed an outrigger craft very similar to the Kora Kora of Indonesia's Maluku Province. This is the first evidence of non-Macassan and European culture contact in Arnhem Land. This vessel differs significantly from Macassan praus and provides the first solid evidence for the existence of the whale hunters from Yolngu mythology, known as the Wuramala and Papyili etc (who are linked to the Sama-Bajau or Sea Gypsies) in many of the sacred narratives. (See Wesley, McIntosh and Owen, et. al. Forthcoming).

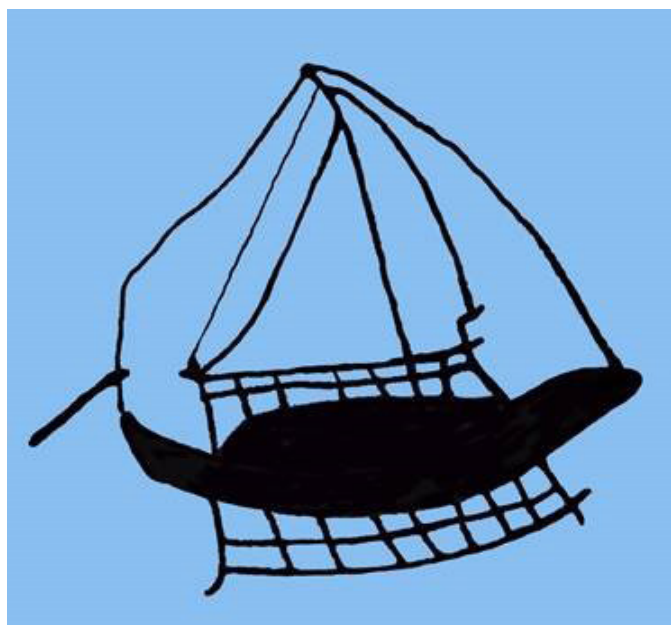


FIGURE 6. STYLIZED IMAGE OF A ROCK PAINTING OF AN OUTRIGGER SAILING VESSEL SIMILAR TO A KORA KORA FROM A ROCK SHELTER ON CAPE WESSEL.

A good number of the images in the rock shelters of the Wessel Islands appear to be linked to the mid-twentieth century and the Golpa clan leader Djingulul or members of his family. There are images of a tractor from the WW2 base located nearby, and also the schooner of the renowned US magician/entertainer John Calvert (See www.pastmasters.net). There are only a handful of sites in Australia with such an impressive record of the past inscribed in rock art,⁸ and mobilizing experts in the recording and deciphering of the images, in close collaboration with our Yolngu colleagues, may provide vital clues on the provenance of the Kilwa coins.

Cape Wessel Mortar and Pestle Sets

Near to where the Kora Kora rock art site is located on Cape Wessel, two mortar and pestle sets were found in the 1970s by a member of the Australian Navy. While such artefacts are found throughout South-East Asia, those of volcanic rock appear to originate in Halmahera in Indonesia's Maluku Province. While it is too early to link the rock art and the stone artefacts, there is good reason for such speculation; the Kora Kora is native to this part of the Indonesian archipelago. In this scenario, the coin deposition might be linked to the Sama Bajau or Sea Gypsies of the islands to Australia's north.

Dundee Beach Swivel Gun

In 2010 a young boy, Christopher Doukas, found a 107cm long bronze swivel gun buried in the sand at low tide at Dundee Beach, an few hours south of the Northern Territory capital of Darwin. There was considerable speculation on its significance for its resemblance to a 16th century Portuguese swivel gun was notable. Geochronologist and Past Master Matt Cupper from the Department of Earth Sciences at the University of Melbourne, carefully removed sediment from within the gun barrel in order to determine how long the gun had been buried in the sand. Using optically stimulated luminescence (OSL) dating methods he was able to determine that it was deposited on the sea floor upwards of 300 years ago, making it one of the most significant historical artefacts ever found in Australia. Cupper also conducted a lead isotope assessment of a fragment of metal from within the bore of the gun and his findings were presented at a national conference

⁸ See for example, Bigourdan (2006) for examples of watercraft in rock art from Western Australia



FIGURE 7. ONE OF THE TWO MORTAR AND PESTLES FOUND AT CAPE WESSEL IN THE 1970s. INITIAL SPECULATION LINKS IT WITH HALMAHERA IN INDONESIA'S MALUKU PROVINCE.



FIGURE 8. THE AUTHOR WITH THE DUNDEE BEACH SWIVEL GUN IN DARWIN, 2013.

on Tropical Archaeology in Cairns in 2015. The sample was compared to some 2000 ore samples from the Mediterranean zone and it corresponded closest to samples from the Coto Laíquez mine near Huebro in Andalusia, Spain. At this stage we are of the view that while the metals can be sourced to Europe, the design of the gun, a prestige piece no doubt, represents a South-East Asian replica based on a Portuguese design. As this dating represents a period of time before the advent of Macassan trepanging, it is unknown who might be responsible, though slavers and brigands are not an unreasonable assumption.

Boustead Jar

In 1998 an earthenware jar now known as the Boustead Jar, was found at Shoal Bay near Darwin by local fisherman Billy Boustead. It was partially exposed on a sand ridge behind a belt of mangroves. Initial speculation by staff of the Northern Territory Museum and Art Gallery was that it was probably of Spanish or Portuguese origin. In 2003 the jar was dated using thermo-luminescence at

the University of Wollongong School of Geoscience at 490+/- 80 years BP. Three possible scenarios have been suggested for the presence of the jar: European transport, South-East Asian mariners, or drift voyaging (See De La Rue 2006). The date of the pot coincides with the early days of the Portuguese presence in Malacca in 1509, Solor Islands in 1511 and hence further east into the Maluku province and the Spice Islands. The Past Masters are currently undertaking further tests on the jar and are in communication with specialist scholars in Portugal to help determine its provenance.

Fish Traps, Weirs and Ponds

The Past Masters have identified a rare fish trap in the Wessel Islands whose location coincides with the site of a Macassan shipwreck circa 1800. British explorer Matthew Flinders was on his return journey to England after circumnavigating Australia when, at the southern end of Marchinbar Island, he encountered the remains of a prau. He cut it up for firewood and provided gifts to the local Aborigines, whom he identified as the 'Australians' - the first ever use of this term. It is probable that the thirty plus shipwrecked South-East Asians built this fish trap in cooperation with Yolngu to meet their dietary needs as they awaited rescue.

Further west along the north Australian coast there is an ambiguous weir-type structure at the Aboriginal settlement of Goulburn Island (Waruwi). Graeme Dobson (2014) makes this site the focus of his doctoral dissertation examining the possibilities of aquaculture being practiced by foreigners in Australian waters in the pre-colonial period. This stone pond may have once functioned as a fish trap but there is no associated Aboriginal oral history or mythology relating to its origins. It is also possible that this 'trap' may be a natural phenomenon.

Pre-Macassans in Western Arnhem Land

The western Arnhem Land-focused work of archaeologist Daryl Wesley and his colleagues has opened up the possibility of international connections that pre-date the arrival of Macassan trepangers, perhaps as early as the 1600s. Evidence, in this instance, is to be found in the Aboriginal rock art of the Wellington Ranges which show strong evidence of Asian and European contact. Like the Wessels, this area has extensive and diverse indigenous rock art.



FIGURE 9. BILLY BOUSTEAD AND TIM STONE, A GEOMORPHOLOGIST WITH THE PAST MASTERS, INSPECT THE BOUSTEAD JAR IN 2014.

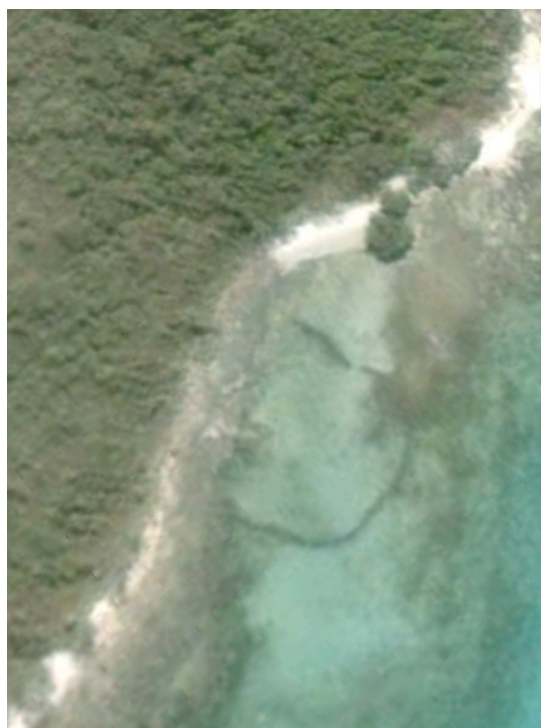


FIGURE 10. THE WESSEL ISLANDS FISH TRAP MAY HAVE BEEN BUILT BY MACASSAN TREPANGERS IN COLLABORATION WITH YOLNGU IN THE EARLY 1800S.



FIGURE 11. AN EXAMPLE OF THE INCORPORATION OF FOREIGN BEADS INTO ABORIGINAL (BINIJ) MATERIAL CULTURE IN WESTERN ARNHEM LAND (WESLEY AND LITSTER 2015) AN1163865001 COURTESY OF THE BRITISH MUSEUM.

At several sites figures made of beeswax are superimposed over the artwork providing an opportunity for radiocarbon dating. One such dating of the beeswax associated with a drawing of a south-east Asian sea craft indicates that this particular image dates to before AD 1664 and is perhaps much older (See Tacon et al 2010). Additionally, Wesley in an award-winning paper, described how a recovered assemblage of beads from six archaeological sites in the Wellington Range supports the case for the introduction of these items in the pre-Mission era context (Wesley and Litster, 2015).

Chinese Connections

Despite the sensational claims of an early Chinese discovery of Australia (See Menzies 2003, Se-Kee 1987), the evidence is very slim. There is no recorded oral history from northern Australian Aboriginal clans that is suggestive of visits by explorer-traders such as Zheng He during the Ming Dynasty. The claim by Gavin Menzies that the Bayini narratives of the Yolngu are linked to Chinese visitation is without foundation (See McIntosh 2015, and later). Only the discovery of an antique Chinese stone statue among the roots of a banyan tree in the city of Darwin in 1870 hints at early Chinese contacts. There is also an unusual painting of a watercraft from the Mt Borradaile area of western Arnhem Land that resembles a Chinese ship but further research is required before any definitive linkage is made. (Pers. comm. D. Wesley, 2016) The Past Masters team did locate an eighteenth century Chinese Qing Dynasty cash coin in 2014 from the southern-most Wessel Island (Elcho Island) during a heritage training session with Yolngu community members. This find was, however, in the vicinity of a Macassan trepang processing



FIGURE 12. THE 18TH CENTURY CHINESE CASH COIN FOUND IN 2014 BY NENAD LONIC OF THE PAST MASTERS AT THE YOLNGU COMMUNITY OF GALIWIN'KU ON ELCHO ISLAND, THE SOUTHERNMOST OF THE WESSELS CHAIN.

site and is probably not linked to the visits of Chinese. Trepan would be traded with the Chinese upon the visitors' return to Makassar (Hermes et al 2014, Macknight 1976).

Outsiders in Yolngu Oral history and Mythology

The Yolngu of north-east Arnhem Land, alone among the peoples of north Australia, developed a very elaborate mythology describing the reasons behind the presence of non-Aborigines in their midst, and also strict laws on how they should interact with them (See McIntosh 2015). The Yolngu have a very extensive oral history pertaining to contact, and this has been a vital resource in the search for information on the Kilwa coins.

From within the Yolngu historical lens, a range of visitors are identifiable, including:

1. Eastern Indonesians and others who were accidentally blown southwards in cyclones or tropical storms. Funerary canoes from the Fly River in Papua New Guinea - which are burned from the inside - occasionally drift onto Arnhem Land shores and are believed by Yolngu to have been sent by the people from the 'land of the dead'. In addition, canoes cut from a single log, and patched over the years with the rubber from flip-flops, are regularly deposited on the beaches, and may originate anywhere from Maluku to Papua New Guinea, or the Torres Strait. Yolngu would refer to the people associated with their manufacture as 'universal travelers'. Their sailing canoes are known as Djulpan, a reference to the stars of Orion's belt which is a canoe in Yolngu mythology.
2. Yolngu oral history identifies various traditional whale hunters who are traceable to Sea Gypsy (or Sama Bajau) populations in various parts of the Indonesian archipelago including the Sulu Sea.⁹ While these Wurumala, Turijene, Papayili, Djamalapu and Gelurru peoples feature in Yolngu myths about the 'land of the dead' they are also said to be real people who have been visiting Arnhem Land since time immemorial. The discovery of the Kora Kora rock art on the Wessel Islands provides some support for this stance. Research indicates that the sea gypsies also worked for Macassan trepan fishermen as divers (See McIntosh 2015). Names associated with their homelands are many, and include actual localities, such as Banda, Danimba (Tanimbar) and Waru (Aru).

⁹ Today, the practice of indigenous Indonesian whale hunting is limited to the Solor Islands, the place where the Portuguese first established themselves in the region in the early 1500s.

3. Yolngu recall in considerable detail the personal names of specific leaders from a period which is associated with the aforementioned Gowa-Tallo (Macassan) Arnhem Land retreat from the Dutch invaders in the late 1660s. As I have documented elsewhere, these men and women established a major encampment on Cape Wilberforce in north-east Arnhem Land and the relationships developed with Yolngu were to have lasting impacts (See McIntosh 2015). This period of contact is associated with iron manufacture from Arnhem Land's abundant red rock (hematite), and also the introduction of aspects of Islam into Aboriginal religious practice.
4. Yolngu oral history makes reference to men with 'hats of mirror' landing on the coast, a probable reference to iron armour, which is suggestive of Portuguese or Dutch explorers. There are also sites linked to the discharge of firearms or cannon in an island chain adjacent to the Wessels known as the English Company's Islands. The associated narratives speak of atrocities, kidnap and possibly slavery.
5. Finally, the landscape of north-east Arnhem Land includes references to specific individuals whose presence is recorded in Yolngu songs and stories but whose origins are unknown. Just north of Elcho Island, part of the Wessels chain, for example, is a reef known as Djiturrk Wangayin, meaning 'Djiturrk cries out.' It was here that a south-East Asian fishermen named Djiturrk caught his foot in the reef and drowned with the rising tide. Yolngu who knew him, lived with him, traded with him, and heard his cries for help, could do nothing. This place remains off-limits for fishing today, especially for non-Aborigines. There are many other named outsiders in Yolngu oral history, young and old, people like Budiman, who had been shipwrecked in Arnhem Land and lived out his life on the Australian coastline, who I will introduce later. Did the Kilwa coins belong to one of them?

There is also a wealth of Yolngu mythology associated with outsiders, most of it focused on the rejection of their advances and influences. The most famous of these narratives are associated with the 'Dreaming' entities Birrinydji and Bayini, and these include plentiful references to the Portuguese and Dutch trading empires, the international trading ports of Banda and Makassar, and of the spread of Islam across the archipelago. These accounts tell of the profound impact of South-East Asians and others on Aboriginal lifeways. In the sacred Yolngu myths of the 'Dreaming' or traditional Aboriginal religion, at the beginning of time the Yolngu were white and rich. Through misadventure and ill fortune, however, the tides were turned on them, and the First Australians became black and poor. The Birrinydji narratives emerged to explain the huge wealth and power disparity between Yolngu and the outsiders, and they embody a future vision of that affluence and influence being theirs once



FIGURE 13. IN THIS 1923 ELCHO ISLAND PHOTO, A VISITING JOURNALIST STANDS WITH YOLNGU WOMEN AND MEN 'DRESSED' FOR THE OCCASION. ON THE FAR LEFT IS DJINGULUL OF THE GOLPA CLAN. HIS BODY PAINTING, INSPIRED BY BIRRINYDJI MYTHOLOGY, DEPICTS A 'WHITE MAN'. THIS IS AN IMAGE COMMON IN CAVE PAINTINGS IN THE WESSELS.

again. The Bayini narratives, by contrast, emerged because of the large number of children born from liaisons between South-East Asian men and Aboriginal women, and the angst and turmoil that ensued. In the 1980s, Yolngu elders would share stories about how they were descended from a golden-skinned foreign woman named Bayini who lived "for the Yolngu". Today, in certain localities, the Bayini myths of old have been transformed into amorphous tales about a stranded white Macassan slave woman who died at sea tied to an anchor but whose spirit still haunts the land. These curious new iterations nevertheless still reinforce the older view that all peoples, regardless of skin colour, owe their allegiance to Aboriginal land and to the spiritual entities that inhabit it. The Wessel Islands, including sites in close proximity to where the Kilwa coins were found, are very much linked to the sacred Birrinydji and Bayini Dreaming narratives.

Kilwa Coin Hypotheses

In the 12th century CE, when the first of the Wessels' Kilwa coins were being minted, the Wessels Islands were populated by a range of Yolngu clans but none have survived to this day. The vast majority of the lower Wessel Islands population became extinct in the early 1900s. This extinction has been linked to a smallpox epidemic that was probably introduced by Macassans or Europeans. There is also the suggestion that the high death rate was the result of an influenza epidemic – there was a high mortality across Aboriginal Australia around this time – but the descriptions handed down to the present of the afflicted as dying from a 'scratching disease' points to smallpox. (See Campbell, 2002; Warren, 2014:75-77)

The area where the Kilwa coins were found, on the island of Marchinbar, was depopulated well before this, probably in the mid-1800s, and there are very few clues as to the fate of clans such as the Wurambil Golpa, the 'rainbow people,' apart from oblique references in oral history to how an evil spirit (*Wurramu* or *Crokman*) descended upon them from above, turning them against each other. (See McIntosh 2015) The estates of the various clans and related traditional paraphernalia have either been passed on to other groups on the mainland or are still in the process of succession, but no-one now lives on the islands on a permanent basis. The old camp sites are still visible especially on the largest of the Wessel Islands, Marchinbar, and there is evidence of the trade in items such as edge-ground hammer stones from the mainland, over 100km away. The current traditional Aboriginal owners, and spokespeople for the islands, the Warramiri and Golpa clans, and a specific lineage of the Galpu clan, are strong supporters of a view of the past that links them over the millennia to the innumerable peoples of the Indian Ocean.

In the 1980s and 1990s, I worked with the traditional owner of the Warramiri clan, the late David Burrumarra M.B.E., who claimed seniority over the entire island chain. On one occasion he spoke of how his clan history speaks of so many distant places across the seas, and how many of his lineage wondered if they might have come from there. With Burrumarra, I recorded many contact narratives, and these have guided the Past Masters' search for clues surrounding the Kilwa coin deposit. Those narratives saw our team anchored in 2013 in a bay where, at the 'beginning of time,' a harpooned whale had dragged a large foreign sailing canoe on to the Australian coast. Would this site provide us with a clue to the Kilwa coins? Then there was a beach where the aforementioned men dressed in 'hats of mirror' had come ashore. Were they Portuguese freebooters, the ones who had looted and burned Kilwa in 1505? We also visited the place where the mysterious 'flying fox' people, in partnership with Yolngu, had made iron implements, anchors, knives and axes, from the commonly found coastal red ironstone. Did they leave the Kilwa coins behind when they left Arnhem Land?

With this rich background of ethnographic and historical data, expedition members and our Yolngu colleagues developed many hypotheses to explain the presence of the Kilwa coins in Arnhem Land.



FIGURE 14. LARGE QUANTITIES OF EASILY ACCESSIBLE HEMATITE OR IRONSTONE LIE ALONG THE WESSELS COASTLINE. THIS SITE ON CAPE WESSEL IS KNOWN BY YOLNGU AS YIKINGA, MEANING KNIFE DREAMING.

Macassan fishermen, for example, developed close working ties with the Aboriginal land owners over many generations. Did they offer up the Kilwa and Dutch coins to the Yolngu for access to their land and sea resources? Yolngu are still very familiar with the location of many of these Macassan sites, often marked by tamarind trees and the stone lines that supported metal trepang cooking pots. While the Wessel Islands were not a source of the trepang species desired by Macassans for their Chinese clients, the large freshwater lake on Marchinbar would have been an ideal reconnoitering point for the Macassan fleet upon entry or departure from the Australian coast. It would have been a significant resource for traders, explorers, or any ship's crew making landfall.

Considerable work has been done in Australia documenting the voyages of Dutch explorers like Abel Tasman. Unwarranted skepticism, however, surrounds the idea of a 'secret' Portuguese discovery of Australia, despite the fact that they controlled the waters to the immediate north of Australia from the early 1500s, and had major forts in Makassar, Ambon and Aru. There are also interesting studies on old trading settlements in Aru that predate the Portuguese and may be implicated in the Kilwa story. (See O'Connor, Spriggs, et al. 2006) So while the idea of Kilwa seafarers being active in north Australia is not viewed as feasible, an indirect link via the Portuguese or others is very much worthy of investigation.

We must, however, be cautious in drawing any conclusions. Coins could easily move around the world without any connection to their producers. Sri Lanka, for example, utilized imitation Roman coins for a number of centuries. In the nineteenth century, Mexican silver dollars from the New World were the currency of the China trade, with prices often quoted in 'Dollars MEX' or simply 'MEX'. Some possible examples of the movement of Kilwa coins include:

1. The Chinese expeditions led by the Muslim eunuch Zheng He in the 1400s had touched upon the Swahili coast at Malindi in Kenya and perhaps also Kilwa. Gifts of coins were known to have been made by the Swahili Sultans to the Chinese emperor, so could some of these have found their way down into south-east Asia and eventually Australia?
2. Arabs had been trading along the 'Zanj Coast' from the Horn of Africa to Mozambique from the beginning of the first millennium and were also well established in Asian ports like Cambay and Calicut in India and in Sumatra, and by some anecdotal accounts also Guangzhou in China by the ninth century CE, though the extent of their presence in China is subject to debate. (See Haw, 2017) As mentioned earlier, the Tang Dynasty era shipwreck at Belitung Island is testimony to early Arab/Indian/South-East Asian mobility in the international waters to the north of Australia.
3. The former colony of Tanganyika (which included Kilwa) was a German possession until after World War One, and so was New Guinea, and there was communication between them. Could Kilwa coins have come to Australia via this connection?

There are still other possibilities. Some members of the research team believed that the coins might have been talisman - good luck charms - that were carried by Macassan or other South-East Asian seafarers. Another explanation is that the coins represented the private property and worldly wealth of the Indonesian shipwreck survivors like Budiman, who lived out his life on the Wessel Islands in the late 1800s near to where the coins were found (See McIntosh 2015). A close friend of the Yolngu, Budiman is remembered very fondly. His name has been handed down through the generations and the whale songs he composed were still being sung by Yolngu around the campfires when I lived at Elcho Island in the 1980s. Another idea is that the coins were of value only for their trade value as copper, and not for their Kilwa inscriptions. Such copper would be used in transactions. It would be weighed and then exchanged for items like pepper at the various emporiums across the Indian Ocean.

Many hundreds of Yolngu traveled aboard the praus bound for Makassar in the 18th and 19th centuries and they may have brought these coins home as earned wages or as mementos. Their descendants also wonder if there were even earlier connections, with Yolngu traveling with pre-Macassans as either crew members (voluntary or forced), passengers, slaves, or simply objects of curiosity. Such talk is not farfetched. As mentioned previously, when the Dutch defeated the Gowa fleet at Makassar in 1667, legend describes the retreat of the Indonesians to the northern Australian coast. In Campbell Macknight's 1976 book, 'The Voyage to Marege', one of the last Macassan trepangers in Australia recollected the story of his ancestors' stay in north-east Arnhem Land, but there are few details and apparently no records in Dutch sources. The Gowa/Tallo leaders of Makassar were in hiding. Yolngu oral history, on the other hand, describes in impressive detail the many fine houses that were constructed on remote Australian shores, the boat-building, iron-furnaces, and pottery manufacture. (McIntosh 2015) My research indicates that the most likely location of the settlement is a place called Dholtji on Cape Wilberforce. Smaller reconnaissance bases were located in the Wessels Islands, which is just to the north-west of Dholtji, and to the south at Port Bradshaw. It is therefore not unusual to expect that items of a special historical character - like the Kilwa coins - would be found in association with one of these places.

Unscheduled visitors might have also been the source of the copper coins. An eye witness account by the German Hans Mayr of the sacking of Kilwa by the Portuguese in 1505 CE noted that the Kilwa people had copper coins similar to the Portuguese ceptis, four being equally to one real (the unit of currency in Portugal from 1430-1911). It is evident that Portuguese and Kilwa coins circulated at parity and both had an extremely long circulating life especially in island South East Asia where minting currency would have been limited. According to Daryl Wesley (Pers. comm. 2016), in early colonial Australia keeping enough currency in the new colony was difficult with not enough cash coins being issued to the authorities. This may also have been an issue in the East Indies in the colonial period, and would have required as many coins as possible to remain in circulation, even the thin and fragile Kilwa currency. (See Feenstra 2014)

In my preferred scenario, if the coins were not deposited by the Sama Bajau (Sea Gypsies), then it was probably brigands who had taken refuge in the remote Wessels after attacking and looting ships bound to and from the Spice Islands. In 1791, convicts Mary and William Bryant and two others escaped from the penal settlement in Sydney Cove in an open boat and headed for Timor and what they hoped was freedom. This was the first successful escape from the British penal settlement. After passing through Torres Strait the convicts tracked west towards the Wessel Islands. On attempting to land on Cape Wessel they were chased by an unknown group of South-East Asian pirates and fled to deeper waters. As I mentioned earlier, there was no trepang of commercial interest in the Wessel Island chain leading us to the view that the people that the Bryant's encountered were on nefarious business. North Australia was a coast of adventure, too far away and too dangerous for any serious contemplation of foreign settlement, until the arrival of the British in the early 1800s. But it was not unknown or unvisited.

My personal view is that the Kilwa and Dutch coins were both deposited at the same time, after the date of the latest Dutch coin (1784CE) and were not the result of two separate historical incidents as some contend (See Mira 1993). On the preponderance of evidence, my contention is that if these are not a casual loss linked to the presence of slavers or brigands, or non-Macassan fisherman from the Banda Sea region, then they were probably introduced by sailors from Makassar in the first wave of trepanging and exploration in north-east Arnhem Land in the 1780s. There were large numbers of ships and sailors in the waters to the north of Australia by this time, and these coins may have been given as gifts to the Yolngu land owners of the fresh water lagoon in Jensen Bay on Marchinbar. The coins, and whatever other gifts were bestowed upon the Yolngu, would have been perceived as payment for access to their land and resources. The Macassans, if they were the responsible vector, would have hoped that it would cement a relationship that would last for many years.

Discussion and Next Steps

When a new archaeological idea or hypothesis is at odds with prevailing views, it is readily discredited. This is especially so in Australia where little credence is given to Aboriginal oral history and mythology as sources of information about the past. (See Wylie 1989) The narrow vision of Australian history that situates the island continent within the sphere of British influence rather than South-East Asia has obscured the ability of researchers to comprehend the significance of the Kilwa find. This was a mindset that insinuated that Indigenous Australians had little or no capacity to conduct trade or to otherwise entertain relations with non-Aboriginal others. Such was the case with the 1945 Kilwa coins discovery. Maurice Isenberg had the coins identified in the late 1970s with the assistance of noted numismatist Bill Mira. Soon thereafter, the coins were donated to the Powerhouse Museum where they lay outside the public gaze, the sole internet reference incorrectly labeling the African and Dutch coins – an error that persisted until quite recently. Former museum director, the late Pat Boland, unsuccessfully attempted to mount an expedition to the Wessel Islands in the 1980s to try and unravel the mystery of their deposition. Similarly, in the 1990s, Yolngu leader David Burrumarra and I sought funds to undertake a survey of sites of mythological and historical significance on the Wessels – including the coin find site – but there was little interest from funding agencies. The idea that the Arnhem Land coast might have been connected in some fashion to the Maritime Silk Road was unfathomable, even heretical, to the orthodoxy, and dismissed as a hoax. The Captain Cook-centred view of Australian history that prioritized English (and certain Dutch) discoveries was still very much in vogue.

How times have changed! A press release from Indiana University, where I am based, describing the circumstances in which ancient African coins were found near a far-flung Australian World War Two base, went viral on the internet. Expressions of interest for partnership came from television and documentary producers and journalists from all corners of the globe. Funders were intrigued by the idea of re-writing Australian history and were willing to support the expedition and its goal of putting to bed the outdated myth of Australia's isolation.

Apart from seed money from Australian Geographic, the Past Masters expedition attracted funding from a range of institutions including the Swiss Ubuntu Foundation (that facilitated the Aboriginal training workshops), the Chicago/Adelaide-based Minelab, one of the premier metal-detecting companies in the world, and Pacific Aluminium, a subsidiary of Rio Tinto, which oversees the Gove bauxite mine in north-east Arnhem Land. Additional support was received from the Pan-Asia Institute, a collaboration between Indiana University and the Australian National University, and from a large number of individuals through our crowdfunding efforts.

We are now in the process of planning for the second phase of field work. Apart from exploring the possibility of shipwrecks as a cause of the coin deposition, and excavation at key sites associated with iron manufacture, our priority will be the documentation, dating and interpreting of the unique rock art we encountered. Totemic images of snakes, whales, bandicoots, and hand stencils, have been superimposed with paintings depicting what appears to be waves of foreign contact, including a variety of sailing ships and sailors. Working hand-in-hand with the Yolngu traditional owners, sea rangers, and our team of experts and enthusiasts, the answers to the mystery of the Kilwa coins will continue to be explored.

We face a number of challenges. The destructive force of recent tropical cyclones which tore across the Wessel Islands has profoundly disturbed ancient and more recent habitation areas, making site analysis more complex. The rock art also shows serious signs of deterioration since I first witnessed some of the caves in the late 1980s. Protection of the art work needs to be prioritized, but we also have to contend with the impact of looters. In the mid-twentieth century, for example, a noted Australian naturalist publicly admitted to plundering painted Aboriginal skulls from caves in the Wessel Islands. Yolngu land owners seek the immediate return of these and related stolen items of historical and cultural significance, for reburial.

In cooperation with Sydney's Powerhouse Museum and experts at the Maritime Museum of Western Australia, we are also in the process of conducting scientific tests on the Kilwa and Dutch coins to try and determine how long they had been exposed to saltwater. At present it appears that the coins do not have a similar deposition history; unlike the Kilwa coins, the younger Dutch coins show signs extensive wear on both sides. Further testing of both sets of coins, and other Kilwa and Dutch specimens, might help determine whether a shipwreck or shipwrecks, or other processes, are connected with their deposition.

The Past Masters advocate strongly for the long term protection of the Wessel Islands as an Indigenous Protected Area under the Australian Environment Protection and Biodiversity Act. These majestic islands, which are freehold land held by the Arnhem Land Aboriginal Trust, are already under consideration as a conservation zone. All the necessary preconditions for recognition are present: unique natural beauty, sites of major Aboriginal cultural and historical significance, ten threatened or endangered natural species including the Golden Bandicoot and the Northern Quoll, and the remains of a World War 2 outpost. The islands also support many indigenous uses, from conservation, recreation, tourism, and commercial fishing. It is time for the homeland of 'the Australians' to be recognized as being an integral part of Australia's national patrimony.

Even at this early stage of our deliberations it is evident that the idea that Australia lay isolated in the great southern ocean, hidden from the rest of the world until Europeans could liberate the continent from its seclusion, is an anachronism. It is a relic of the mindset that perpetrated, and still perpetuates, the myth of terra nullius, or the 'land without people'. The doyen of Australian archaeology, John Mulvaney, opined in 1969 of a need to change the emphasis from the conventional view of how and why Australia was 'discovered' to an assumption that evidence of earlier discoveries will be forthcoming. With the Kilwa coins, and a growing number of historic finds across northern Australia, we have such evidence.

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Asian Military and Mercantile Movements in East Africa during the Nineteenth Century, a Few Notes

Beatrice Nicolini

Faculty of Political and Social Sciences, Università Cattolica del Sacro Cuore, Milan, Italy

E-Mail: beatrice.nicolini@unicatt.it

Abstract

During the nineteenth century, the growth in the volume of trade managed by Asian mercantile communities – with the political support of Arabs and military protection by Asian soldiers, led to progressive modifications of African populations. These lost their trade monopolies, and their most deeply-rooted social and cultural traditions underwent thorough and traumatic changes. Entire squadrons of Asian soldiers settled in the interior of East Africa at Tabora and at Kigoma, on Lake Tanganyika. In this same century Asian troops, together with the soldiers called *Washihiri* (sg, *Mshihiri*) from the port of Shihr in Hadhramaut, fought also against the Nyamwezi in the region of the Unyanyembe. Other Asian mercenaries joined the caravans that traded with the interior, travelling as far as the Congo. On the island of Zanzibar, instead, a gradual process of osmosis occurred that often linked magical practices with the precepts of the Quran, resulting in different hierarchies of power that reflected the multiplicities of social, cultural and religious roots. These interactions improved commercial activities, to the point that the British explorer and adventurer, Richard Francis Burton (1821-1890), defined the Island of Zanzibar (Unguja) as: ‘*the depot of the richest trade in Eastern Africa*’.¹

Indian Ocean Perspectives

The ecotones, as points of contact or points of friction, between the Indian Ocean and East African littorals, and the Islands of Zanzibar and Pemba, provide the main framework for this study’s methodological perspective. Adopting a maritime as well as a coastal landscape outlook, we will try to address questions of continuity, change and identity. More specifically, the study will aim to reconstruct the nature, patterns, and intensity of resource use at different periods in the past; the environmental contexts, impacts and sustainability of these different strategies of resource use; the nature and form of the port towns, and the natural and cultural landscapes where they were situated; the mechanisms and technologies of trade and maritime activities; and the nature of settlement activities outside of the towns. There is further scope, also, for developing some of the ideas of historians concerning the manner in which interaction between land and sea has fashioned the histories of many societies and civilizations, and on the significance of trans-oceanic links between these maritime societies. Similar ecologies around the Indian Ocean have developed into similarities in the social and cultural fields, giving rise to intercultural connected land and maritime societies. They were part of many global unities that long preceded the capitalist unifications of the world from the sixteenth century onwards. The monsoon system that dominates the region has given rise to a great deal of similarities in the

¹ Abbreviations

Quetta Archives - Balochistan - Pakistan

A. G. G.: Agent to the Governor-General

B. A.: Baluchistan Archives

H. S. A.: Home Secretariat Archives

R. F. Burton. 1872. *Zanzibar: City, Island and Coast*, London, Tinsley Brothers 2/II, 102-103.

social and cultural fields, resulting in cosmopolitan and interconnected maritime societies. Little has been published about these so-called diaspora communities. For a long time, available literature, not so abundant on this particular topic, portrayed Asian communities as a monolithic group of people who migrated in search for a better life.² Within this framework, the realities of terrain, climate and maritime connections and interconnections had a great influence on the construction and/or reconstruction of Asian identities in East Africa throughout contemporary history. It should be noted, however, that ethnocentric views, especially Eurocentric ones, have informed numerous studies for a long period, and continue to do so. In this regard, most western-oriented strategic studies, reports, and analyses on the role of the Indian Ocean region, and of its people throughout history, focussed mainly on external threats, interests and priorities.

The importance of the migrating movements of the so-called diaspora communities, from historical, political and cultural perspectives, will be here analysed methodologically. The realities of terrain, climate and maritime connections and interconnections had considerable impact on the construction of Afro-Asian identities throughout contemporary history. The gradual creation of 'empty space powers' in this vast Indian Ocean region of 44 million square kilometers often lead to incorrect focuses on the processes of dominance; at the same time, numerous contemporary local and regional interpretations were too blinded by resentment, sorrow and injustice to offer lucid analysis. International, as well as regional policies which ignored consistently both of these perspectives were, and probably still will be destined to fail. Consequently, an inward look at the region as a whole and at the true identities of Asian and East African groups, essentially cultural and religious identities regardless of political boundaries, could facilitate new, and more empathetic approaches to the study of their roles throughout the broader Indian Ocean region.

An underlying factor that has not yet been sufficiently emphasized is the mastery of shipbuilding techniques and navigational knowledge that was already in place by the sixteenth century. This facilitated the ready contacts of peoples, cultures, faiths, and goods.³ Historically, the growth in the volume of trade managed by Asian mercantile communities, with the consent and political support of the Arabs, and the military protection of Asian soldiers, led to a gradual but progressive weakening of the African populations. These lost their trade monopolies, and their most deeply-rooted social, religious and cultural traditions underwent traumatic changes. During the nineteenth century, entire squadrons of Asian soldiers were stationed in the interior of East Africa at Tabora and at Kigoma, on Lake Tanganyika. Asian troops, together with the soldiers, like the *shihiri*, from Hadhramaut, fought also against the Nyamwezi in the region of the Unyanyembe. Other Asian mercenaries joined the caravans that traded with the interior, travelling as far as the Congo.⁴ On the island of Zanzibar, instead, a gradual process of osmosis occurred that often linked magical practices with the precepts of the Quran, resulting in a political-social mix and management of power that reflected a multiplicity of cultural roots.

Monsoon 'Waves' in the Indian Ocean

Oman formed innumerable ties between the littorals of South-Central Asia, the main coasts of Oman itself, the Swahili coast, and the Great Lakes region. The life and times of Asian communities in East Africa from 1800 onwards is still quite obscure; and documentation on the subject is lacking. Asian groups in Eastern Africa were introduced between the eighteenth and the nineteenth centuries by Omani military defence forces. Once settled, their culture has undergone quite a metamorphosis from

² J. H. Zaidi. 1967. *The Asian Community in East Africa: its geographical distribution and economic and social characteristics*, Ph.D. Thesis, Denver University, USA.

³ P. Machado. 2014. *Ocean of Trade. South-Asian Marchants, Africa and the Indian Ocean, ca. 1750-1850*, Cambridge, Cambridge University Press.

⁴ J. C. Wilkinson. 2015. *The Arabs and the Scramble for Africa*, Sheffield, Equinox.

the end of the eighteenth century onwards. Traditional Asian lifestyles gradually blended with the Swahili and the African ones. Asian ancestors interacted with local people and assimilated to become part of the cultural and social life of the Eastern and Central African regions. It must be noted however, that they did not lose their original cultural identities. Language and culture apart, Asians, both along the coasts of East Africa, and along the Central African hinterland, maintained their identities from the rest of the people. From the end of the eighteenth century, the Al Bu Sa'id of Oman empowered mercantile expansion towards the oceanic coasts of East Africa; therefore new cultural borders developed within the Indian Ocean represented by continuous migratory flows. During the nineteenth century the official dominions of Muscat consisted of the Island of Bahrain, the coast of Makran, some areas along the Persian coast such as Chah Bahar, the Island of Socotra, the Islands of Kuria Muria, the Islands of Zanzibar and Pemba - sub-divided into small coral types, warm and cold water islands - and adjacent ports of the East African coast. And it was in this very period that the presence of many new economic opportunities in Africa was a potent factor that led Oman more and more towards Zanzibar. The presence of Asian communities on the Swahili coast and in the East African Great Lakes region was initially apparently interconnected with the Omani Sultans; they took their place as soldiers within the slave and caravan trade along the Swahili coast during the nineteenth century, nominally controlled by Oman, and represented by many diversified groups. This was the endless interplay of power relationships within different societies in the Indian Ocean. The conservation of Asian cultural identities in East Africa was a legacy of some descendants of the nineteenth-century Asian mercenaries albeit restricted to few small enclaves. In this regard, Asian presence and influences on East African societies and cultures are here open research issues. Soon new cultural ties developed within the Indian Ocean represented by continuous migratory movements. Oman itself, under its dynasties and throughout the progressive evolution of internal struggles, as well as through the exogenous elements represented by the new regional and international challenges, became a positive example of a true and open society and a tolerant country to different cultures, economies, and religions. While many trace African elements in Asian cultures and societies in general,⁵ the challenge here is to re-examine the presence of Asians in East African cultures, religions, and societies. Thanks to research carried on in the Balochistan Archives (Pakistan) combined with research in the British Archives, and fieldwork conducted in Pakistani Balochistan, in the Sultanate of Oman, in the United Arab Emirates, in Ethiopia, in the Zanzibar National Archives, and in Mozambique, it is clear that the Asian presence throughout the Indian Ocean was apparently closely historically and politically connected with military activity, piracy, human trafficking, and with measures taken by the British authorities against the slave trade during the nineteenth century.

Oman's international trade activities over four centuries - 1500 to 1800 - saw numerous waves of political leaders, seafarers, merchants and adventurers in an escalating competition from every part of Asia and Africa as well as from Europe and now from the United States of America. The gradual emergence of new Omani dynasties resulted from the polarization that followed the struggle against the Portuguese presence in the Persian/Arabian Gulf and in the Indian Ocean. This gave rise to gradual and discontinuous practices of unification among the Omani groups, traditionally divided and in conflict with each other, that came to the fore in the progressive affirmation of what we could define as the international power of the Omani Arabs in the Gulf and in Eastern and Central Africa. It is true that the history of Oman's⁶ international trade relations has often been connected to the maritime routes across the Indian Ocean: sailing the Gulf and the Indian Ocean had always been dependent on the fact that the winds occur in an annual sequence with great regularity. The balance created by the monsoons⁷ lasted through the whole year with the following rhythm: from December to March the monsoon blows from

⁵ S. de Silva Jayasuriya. 2010. *The African Diaspora in Asian Trade Routes and Cultural Memories*, New York, Mellen Press.

⁶ The word Oman was used by Europeans to describe all of South-Eastern Arabia that lies to the east of the sands of the Rub'al Khali.

⁷ The term derives from the Portuguese *monção*, from the Arabic *mawsin* (pl. *mawasin*).

the Arabian Peninsula and the western coasts of India in the north-east, pushing as far as Mogadishu. The winds are light and constant, the climate hot and dry. In April the monsoon starts to blow from the south-west, from Eastern Africa towards the coasts of the Gulf, the climate cooler and much more humid. The rains are mainly in April and May, while the driest months are November and December. Moreover, along the East African coasts and in the islands of the Indian Ocean, the tropical climate is always tempered by sea breezes.

Sailing from Arabia in November in a south-south-westerly direction took thirty to forty days in ideal weather conditions while, in December, thanks to the stabilization of the monsoon, the voyage took only twenty to twenty-five days. Consequently, thanks to the monsoons the international trade relations of Oman had been historically sea-borne; although Omani land-based trade was also intense. Maritime coastal trade, as well as long-distance trade, constituted the expressions of an economy that was highly sophisticated, developed and organized; therefore, the necessities of defence and control of these sea trade routes represented a crucial element: a political element.

During the sixteenth century the Portuguese presence in the Gulf did not really affect Oman trades; nevertheless, after the loss of Hormuz in 1622 the Portuguese increased their influence at Muscat while the Ya'ariba threatened the Portuguese forts along the coast of Oman, as well as the trade in pearls from Julfar and horses from Muscat.⁸

From the eleventh to the seventeenth century the Ya'ariba dynasty empowered Omani foreign trade through an active naval policy (latterly against the Portuguese), combined with an expansion of their mercantile influence in sub-Saharan East Africa. During the eighteenth century the Ya'ariba stood at the head of a rich mercantile region that was linked to the coastal cities, and to the principal islands of East Africa. The Ya'ariba Omani domination along the East African littorals, which included Mombasa and the island of Pemba, as described above, was characteristic of changes in dominion over the seas, which did not result in substantial alterations in traditional commercial organization. The presence of Arab governors was for the purpose of controlling trade and imposing taxes; this institution had its roots in the traditional Omani system of exercising power, as well as in the political agreements with local African chiefs and rulers. In this regard, the Ya'ariba, often assisted by merchants from the coasts of western India, and defended by Asian troops, carried to the coasts of Sub-Saharan East Africa what we could name the Omani power system. After centuries of relative prosperity, the traditional thalassocratic system that had developed along the shores of the Indian Ocean was deeply modified by the Europeans, who started to extend their mercantile and territorial ambitions from land (*terra firma*) to the seas.

Ya'ariba society was a rich and powerful merchant and landlord society, and numerous forts were built in Oman during the Ya'ariba period. The round fort of Nizwa was begun by Sultan bin Saif I (1649-80); while his son Bal'arab (1680-92) built the magnificent fort of Jabrin. Saif bin Sultan I (1692-1711) was the greatest of the Ya'ariba princes, and was succeeded by his eldest son Sultan bin Saif, who in turn was succeeded as Imam in 1719 by his son Saif bin Sultan, a boy of twelve. Unable to find any further support for his cause in Oman, he turned to Persia for help, and his country was soon invaded by a large Persian force. The Omanis suffered many defeats but were finally helped by Ahmad bin Sa'id, one of the small Al Bu Sa'id who, at that time, was governor of Sohar. He defeated the Persians and, after having overcome the Ya'ariba family and their Ghafari supporters, was elected Imam and founded the present Al Bu Sa'id dynasty.⁹

⁸ W. Floor. 2015. (replica). *The Persian Gulf: A Political and Economic History of Five Port Cities 1500-1730*. Washington D.C. Mage Persian Gulf Series.

⁹ B. Nicolini. 2016. *Maritime Activities in Oman throughout the Indian Ocean 1650-1856 CE*. E. Staples (Ed.), *Oman. A Maritime History*, Verlag. In press. B. Nicolini. 2017. Oman's Maritime Activities in the Indian Ocean, 1650-1856 CE. in A. Al Salimi, E. Staples (Eds.).

The title of Imam gave Ahmad bin Sa'id Al Bu Sa'id a certain political and commercial control over Oman, and under him and his successors the country saw an expansion for more than a century. The Omanis extended their influence into the interior and into part of present-day United Arab Emirates (U.A.E.), consisting of the future states of Abu Dhabi, Ajman, Al Fujayrah, Dubai, Ras al Khaymah, Sharjah, and Umm al Qaywayn. They also collected tribute from as far away as present-day Bahrain and Iraq. The Al Bu Sa'id were in conflict with groups from the Dhofar region, which is part of present-day Oman but was not historically part of the region of Oman. Although Ahmad bin Sa'id Al Bu Sa'id had succeeded in uniting Oman under an Ibadi imamate, the religious nature of his family's authority did not last long. His son, Saiyid Sa'id bin Sultan Al Bu Sa'id (r. 1806-1856), was elected to the Imamate after him, but no other family member had the official approval of the religious establishment. The Al Bu Sa'id called themselves *Sultans*, a secular title having none of the religious associations of Imam. They further distanced themselves from Ibadi traditions by moving their capital from Rustaq, a traditional Ibadi centre in the interior, to the trading maritime centre of Muscat. The result was that the traditional conflict relationships between the coast and the interior were reconstituted. Starting from the eighteenth century, groups from the interior gradually began to settle on the new coastal centres.

From the end of the eighteenth century, the Al Bu Sa'id empowered mercantile expansion towards the oceanic coasts of East Africa; therefore, multiple cultural, economic and religious ties developed within the Indian Ocean represented by continuous migratory flows. What was described as the lucrative movement of goods traded by Oman throughout the Indian Ocean comprised every type of merchandise and spice - for the most part precious. To name some: rhubarb, borax, ginger, sesame, ivory, tortoise shell, rhino horn, beeswax, opium poppies, exotic animal skins, birds of prey, diamonds, vermilion, gold, horses, raffia, silk - which the Omanis regarded as having protective powers against disease and parasites - castor oil, tamarind, cloves, vanilla, curry, nutmeg, rubber, tropical fruit, Mocha coffee - very much in fashion in Europe at the beginning of the second half of seventeenth century - Chinese ceramics sometimes used as precious containers for dates in Oman, musk from Tibet and China, enormous quantities of ambergris bought on the shores of the island of Zanzibar or the nearby islands, considered a delicacy by the Omani who even put it in sorbets!

We know that ivory was exported from the Eastern coast of Africa in considerable quantities from an early date, as was also rhino-horn and tortoise-shell, and rock crystal. In 1800 the principal products exported from the East coast of Africa and from Zanzibar were cloves, copal, ivory, hides, red pepper, sesame, copra, coconut oil, tortoise-shell, cowries, beeswax and tallow. While goods imported included cotton, arms, gunpowder, Venetian beads,¹⁰ clocks, spirits, wheaten flour, refined sugar, brass wire, glassware, chintz and chinaware. Major exports from Zanzibar to Oman were: ivory, cloves, copal, sandalwood, coconuts, hippo teeth, cowries, rafters, rhino horn, beeswax and ebony. The Omani seafarers from the Red Sea carried Venetian beads, coffee, aloes, and dragon's blood; those from the south coast of Arabia sold dried fish, fish oil, ghee and onions; and those from Oman and the Gulf brought to East Africa dates and raisins, donkeys and horses, Muscat cloth, Persian carpets and silks, nankeen, crude gunpowder, almonds and drugs (mainly saffron and asafoetida). The Omani also brought honey, water jugs, garments, rose water, gold and silver thread. The most important Arab purchase from Africa was slaves; they also took ivory tusks, cloves, coconuts, and rafters. Oman bartered with Europe and, from 1833, with the newly-founded United States of America, coconuts, tortoise shell, red peppers, and beeswax in exchange for hardware, cotton wool and fabric.

Saiyid Sa'id bin Sultan Al Bu Sa'id opened in the Indian Ocean new political and mercantile realities. The main factors of the rise of new maritime trade networks were constituted by the expansion of the spice

Oman. A Maritime History. Vol. 9. Hildesheim, Zurich, New York. Olms-Weidmann. 141-161.

¹⁰ K. Pallaver. 2012. Muslim Communities, Long-distance Traders and Wage Labour along the Central Caravan Road, Tanzania Nineteenth Century, *Storicamente*: 1-8.

trade, especially by the cultivation of cloves in the islands of Zanzibar and Pemba, by the slave trade, by ivory exportation, and by their involvement with the European powers of the nineteenth century.

Saiyid Sa'id bin Sultan Al Bu Sa'id spoke Arabic, Hindi, Persian and Swahili; he had seen the island of Zanzibar for the first time in 1802, when he was only eleven years old - he was enchanted. He represented the major exponent of the re-evaluation of the spice trade as a means of the creation of a power elite, through a significant expansion of the cultivation of cloves in Zanzibar. This highlights one of the first major steps towards the importance of spice. At the end of the eighteenth century the introduction of cloves (*Eugenia Caryophyllata*, from the Mirtaceae family, *karafuu* in Kiswahili, from Sanskrit *karan ful*) into this tropical island determined a new perception of economic-commercial potential to the eyes of the Al Bu Sa'id. The creation of a new niche of agricultural exploitation in Zanzibar itself and in Pemba was destined to turn Zanzibar and Pemba into new centres of global mercantile interests. Saiyid Sa'id bin Sultan Al Bu Sa'id died when he was 65 at the Seychelles on a dhow that was taking him from Muscat to Zanzibar on 19 October 1856.

A working hypothesis

While many trace African elements in Asian cultures and societies including in Baloch culture and society, we are here trying to re-examine Baloch presence in East African culture and society. Baloch presence in the Gulf and throughout the Indian Ocean was closely historically and politically connected with military activity, piracy, and measures taken by the British authorities against slave trade during the nineteenth century.¹¹

Starting from the nineteenth century, the Baloch level of influence on trade routes controlled by Muslim merchants in the Gulf and in the Indian Ocean was high. The growing geo-strategic importance of the Indian Ocean as a sea highway was soon to becoming the focal point of world politics, making the region a new centre of world affairs. The promotion of trade and its influence was not only a source of complex relationships between different people and different cultures and religions, but it also played an important role in searching for peace among all the littorals of the Swahili coast.

Two distinct political entities were destined to co-exist along the coasts of South-West Asia, in the desert region of Balochistan,¹² in Oman, and in Eastern Africa: the complex, multi-ethnic mercantile societies of the coasts, and the tribal, pastoral societies of the interior where, from time to time, the former succeeded in prevailing and imposing its laws. In the ports of these maritime corridors, small city-states prospered, their gaze directed mainly seawards, while larger regimes turned towards the interior and the north. The city-states preserved their independence and attempts to make inroads on their commercial predominance often ended in failure for their enemies. The Arab potentates of the coasts thus created flourishing markets between the ports of South-Western Asia and the Arabian, Western Indian and East African coasts. A principal terminus for this complex and interwoven system connecting goods, people and cultures was the coastal strip of Makran. Information regarding the Makran was quite scarce and, until the nineteenth century, was essentially based on oral tradition and the few details provided by the occasional missionary or British officials sent there by the East India Company and/or by His Majesty's government, concerned both with the trade and defence westwards of the colony *par excellence*: India. At the start of the nineteenth century, Makran constituted a cultural entity quite distinct from the 'Indian' region and was seen as being 'other' also by the Persian Qajars: a

¹¹ L. G. Potter (Ed.). 2014. *The Persian Gulf in Modern Times. Peoples, Ports and History*, Palgrave Macmillan, New York.

¹² J. E. Peterson. 2004. "Omān 's diverse society: Northern 'Omān", *Middle East Journal* 58 (1) (*Middle East Journal*, 58/1, 32-51; J. E. Peterson, *The Baluch Presence in the Persian Gulf*, L. Potter (Ed.). 2013. *Sectarian Politics in the Persian Gulf*, London, Hurst, 229-244.

frontier region.¹³ Truly inhospitable by nature, the region was inhabited by warlike peoples, indomitable and famed for their braveness. Notwithstanding this, however, and thanks above all to the renewed political order of the Qajars and their frontier feudalism, the area never ceased to represent one of the main transit routes between the Iranian plateau and the Indus valley along which most trade passed, from east to west and north to south, by land and by sea.¹⁴ Moreover, it became the ideal refuge for rebels, bandits, pirates and fugitives.

The coastal region of Balochistan, Makran, since ancient times, held an historical strategic position as the most direct route between the Middle East and the riches of the Indian subcontinent. Covering an area of 62,000 square kilometres, Makran forms the southernmost strip of the Balochistan province. As there is hardly any rain, the few villages and settlements depend on spring water and wells (*qanat/kariz*). The coast has several small fishing villages while the main ports like Gwadar, Ormara, Jiwani and Pasni have fishing harbours where the fishermen could be seen coming in with their catch every morning and evening, where Makrani Baloch were used to trading with all the maritime world in the past of the Indian Ocean. The port of Gwadar lies on the coastal area of Makran.¹⁵ Its dry climate combined with natural geographical features make one of the most daunting environments for successful human habitation. Therefore, it is sparsely populated. Makran was - and partially still represents today - a place of refuge for innumerable dissidents, rebels and fugitives. Among the first were, as stated above, the Omani, who gradually imposed their power on the main coastal centres. The case of Gwadar was of particular interest as the town, its port and the surrounding territory were granted as a *jagir* (a temporary grant of land exempted from taxation) from the *khans* of Kalat to the Al Bu Sa'id of Oman. From a *jagir* Gwadar soon assumed the *status* of an enclave of the Sultanate of Oman.¹⁶ It is here interesting to note that, once in East Africa, and once having consolidated their military power on behalf of the Omani Sultans along the Swahili coast, some elements among these Baloch groups, while remaining soldiers, had started trading activities. The Baloch settled and gave life to different activities linked to the slave and ivory trades: the main merchandises of the time. Therefore, Baloch presence along the Swahili coast throughout the 1800s was destined to make a high impact on local societies, and to significantly modify its main motivations and objects; the result was an important contribution to Swahili culture and society, and to relevant changes within Swahili traditional customs. Accordingly, it should be remembered that Baloch activities did not make them wealthy to the level accorded to the legendary prosperity described in most available literature. The supposed great wealth of the Sultans of Zanzibar, as well as the luxury of their court, was far from reality; probably it was an imaginary and exaggerated richness politically calculated. Consequently, the Baloch presence has been poorly studied and closely, and often exclusively, related to their military and defensive role within the groups of Oman. It is believed that Baloch groups were found mainly along the Swahili coast littorals and in the islands of Mombasa, Zanzibar and Pemba; but they developed trading relationships into the hinterland of East Africa; few Arabs ever went to the interior of Africa, only Swahili traders like for example Tippu Tip (ca. 1840-1905, alias Hamed bin Mohammed bin Juma bin Rajab el Murjebi). The close connections between the Omani Sultans and their Baloch soldiers and bodyguards represented a crucial issue: loyalty was the prerequisite for the recognition by the Omani of their soldiers, and from the nineteenth century onwards, descendants of Baloch soldiers were absorbed into the new realities and co-existed with Swahili society and its economy.

¹³ B. Nicolini (Ed.) 2015. *The End of the Borders*. Milan, Quaderni Asiatici: Scalise.

¹⁴ H. Strasburger 1954. *Zur Route Alexanders Durch Gedrosien*, *Hermes*, 82/2: 251-254; M. E. L. Mallowan. 1965. *The Mechanics of Ancient Trade in Western Asia: Reflections on the Location of Magan and Meluhha*, *Iran*, British Institute of Persian Studies, 3, 1-7.

¹⁵ Since 1964, the Gwadar Deep Sea Port Project was a dream of Pakistani President's governments; after the collapse of the Soviet Union and the newly formed Central Asian republics - together with the rich trans-Afghan pipelines - China finally largely financed (\$200 millions) and built the Gwadar Port Project first phase in January 2006. Although the Pakistani Gwadar should become a twenty-first century reality equipped with a highway and oil and natural gas pipelines, connecting both 'horizontal' (Iran, Pakistan, India, China) and 'vertical' (Afghanistan, Central Asia) strategic and economic interests, the traditions of the Makrani and Baloch groups, still remain politically but not culturally divided.

¹⁶ Report of the British Commissioner for the joint Anglo-Persian Boundary Commission: F. J. Goldsmid. 1876. *Eastern Persia: An Account of the Journey of the Persian Boundary Commission, 1870-1890*. London. F. J. Goldsmid. 1863. Report by Col. Goldsmid on the Claims of Persia, Khelat and Muscat to Sovereign Rights on the Mekran Coast, Political Department. Bombay. 19 December.

Starting from the end of the eighteenth century, and for all of the nineteenth, as already stated above, it was the soldiers of these South-Central Asian groups who protected, hid, supported and defended the Al Bu Sa'id of Oman. This was thanks also to the social structure that, traditionally nomadic, could, most of the time, count on both Makran (encompassing today's Iranian and Pakistani coasts) as well as peninsular and continental solidarity. From the accounts of travellers, explorers and European officials of the nineteenth century other groups of Baloch were emerging along the Swahili coast, the Hot, the Rind and the Nousherwani. These three groups have been identified in available archival sources, although we assume that other Baloch groups were present in the field and in battles both in Arabia and in East Africa. The Baloch from the coastal Asian region of Makran were pushed from the extreme misery of their country towards Persia and towards the coasts of Arabia. Here, they offered themselves to the Omani Sultans as soldiers, sailors, pearl divers (Makran origins), and bodyguards for pay that, though even modest, could represent the difference between life and death for them and for their families.

The Baloch in East Africa and the Slave Trade Routes

Near the coast of equatorial Africa, separated from the continent by a mere fifty kilometres, lies the island of Zanzibar. It is the largest coral Island of East Africa and forms part of a coral reef that stretches from the island of Pemba in the north to the Island of Mafia in the south, creating a kind of coastline detached from the continent itself. Zanzibar is 20 – 30 kilometres wide and roughly 85 kilometres long. The city of the same name lies on the western side of the island and its port, one of the best in Africa, provided good anchorage for deep-sea fishing vessels.

The island of Pemba (*Djazira Al-Khadra*, the green or the emerald island) is roughly 75 kilometres long and 20 wide, an area of approximately 984 square kilometres, and is found 56 kilometres from Zanzibar. Consisting mainly of coralline rock, it is hillier than its sister island, Zanzibar. Pemba was equally well known for its cloves, still the main source of income today. Despite the extremely heterogeneous nature of its population, Pemba is inhabited by the homonymous Bantu group, the Wapemba. The largest town on the island, Wete, in the west, has an imposing square-plan fortress built by the Portuguese that looms over a bay of mangroves.

In the nineteenth century, Pemba had no harbours suitable for large ships. With its shallow waters and dense vegetation, the island had limited reserves of drinking water. However, since the reef protects their coasts, Zanzibar and Pemba were the only Islands of strategic predominance thanks to two variables of fundamental importance: the monsoons and their proximity to the African continent. One of the reasons for their commercial success during this century was that the Islands offered better services compared to other cities of the East African coast. The fleets of the Omani Sultans, moreover, protected the merchants' ships, taxes were low and, not least, Zanzibar had drinking water. The intense traffic of the Indian Ocean shores related to all kinds of goods and spices, in principle of great value. Another particularity of the Island of Pemba was the presence there of powerful magicians, witch-doctors and magical spirits. The island was renowned as the seat of numerous individuals with paranormal powers, and tales are still told of the existence of an invisible city *Gining'i*, in the south of the island, believed to be home to the greatest gathering of wizards and magicians. At that time the islands of Zanzibar and Pemba were administered by governors representing Sa'id bin Sultan Al Bu Sa'id, and who exercised all power on his behalf. The military support furnished by these representatives with extensive authority over the Islands and their affairs, consisted of special troops of proven trustworthiness, that is to say, Baloch corps closely tied to the Al Bu Sa'id by fundamentally economic agreements.

The loyalty these Baloch soldiers had for the Omani ruling family at a time when there was much anarchy amongst the various Omani groups, earned them lasting trust with the Sultan who deployed them to guard all his palaces and interests in the region. (There were a lot of Sindhi soldiers and bodyguards also in Zanzibar who were known as *Sindikali*, the ferocious Sindhis. In Gustav Mattsoon's travelogue in Swedish *En herre for till Sansibar*, published posthumously in Finland in 1915, there is a photo of these armed tall Sindhi fighters with white turbans.)

Baloch soldiers had an early presence on the East African coast. Up until the establishment of the Sultanate in the 1840s, they maintained army posts in the major centres of Mombasa, Zanzibar and Pemba.¹⁷ These men inter-married with the local *waswahili* and were gradually assimilated into their culture and society. They were later followed by whole families who left Balochistan in the hope of finding a better life along the Swahili coast, which became an important manufacturing centre and only later became the hub of international maritime trade with Asia. Most of the Baloch came from Kasarkand, although their brothers later followed them in from Sarbaz, Lur and Muscat. In the early nineteenth century Mombasa was the major Baloch settlement on the coast not least because of the Omani/Zanzibari forces at Fort Jesus, and this is also witnessed by the presence of a Baloch mosque. The Baloch gradually developed links with the interior; it is reputed that the first non African to go into Maasailand was a Baloch, as was the first non-African to be welcomed into the royal court of the Kabaka of Buganda. As they moved inland, the Baloch founded cluster communities in Djugu and Bunia in the Congo; Soroti, Arua and Kampala in Uganda; and Iringa, Tabora, Mbeya and Rujewa in Tanzania; it is probable that there were Baloch families in almost every Swahili town and inland urban centre.

The Baloch settled in Mombasa and developed a more cosmopolitan lifestyle, preferring to engage in small real estate ventures and trade, or keeping employment with the Omani and later, the British. Those who lived in the fertile hills of Uganda and Tanzania flourished in the farming and trading industries. The mercantile skills and business acumen of the Baloch earned them high regard amongst the various communities in which they settled. This can also be said of the small but vibrant Nairobi community.

From the first half of the nineteenth century, the Baluchi (*Bulushi*, pl. *Mabulushi*) communities mainly from Iranian Baluchistan, settled in Saa-teeni, outside Zanzibar town, in Fort Jesus in Mombasa, and later on in the Unyanyembe. The introduction of Ottoman military terms such as *jemadari* (commander), *singe* (bayonet), *bunduki* (gun, rifle), *habedari* (Attention!) were introduced into Kiswahili from Persian, most probably by the Baloch.

During the first half of the nineteenth century the demand for ivory came mostly from Western India. The Omanis exploited the old slave trade routes to the interior bringing new people to the coast of East Africa with elephant tusks. The Mrima was the major source of ivory export for the Zanzibar economy. Imported goods from India were given by the Arabs as presents to the main African chiefs of the interior and this represented a clear sign of prestige and superiority within their groups, although agriculture remained for long periods the primary source of income for the Swahili coast, long before the booming introduction of commerce. Salted and smoked fish became an important item of trade. The islands of Zanzibar and Pemba soon developed the production of fish to provision the porters going to the interior and for the very profitable exchange with ivory. A lot of salted dried fish was imported from the Gulf region, the Red Sea and the Somali coast. Also the demand for copal resin grew during this period for export to the USA. It was locally produced around Bagamoyo and was also brought by Indian traders, as well as mangrove poles for vessels to be taken to Arabia and to the Gulf.

There were three major sets of slave and ivory trade routes to the interior often safeguarded by Baloch corps: 1) the 'southern' route from southern ports such as Kilwa to Lake Nyasa and the highlands of the south-western interior where the Nyamwezi carried tusks and other goods; 2) the 'central' ivory route from Bagamoyo in west and north-west directions, where the caravan trade became progressively monopolized by the Omanis and by the Indian merchants; 3) the 'northern' route, the Masai route from Mombasa and Malindi towards Kilimanjaro where the Mijikenda were ivory hunters together with the Kamba. The Saadani caravan route did not develop an Arab merchant community, while the Pangani route led to the foundation of Ujiji around 1840 and passed through the Bondei hills and along the foot of Usambara and Pare mountains, well watered and preferred by travellers from other towns of the northern Mrima. Large quantities of ivory, *pembe*, of both soft

¹⁷ A. Y. Lodhi. 2013. The Baluchi of East Africa: Dynamics of Assimilation and Integration, *The Journal of the Middle East and Africa*, 4/2.

and high quality, came from Pare and the Rift Valley, and this route became the second in importance after Bagamoyo. The Taveta trading station never became dominated by coastal Muslims, as it was too dangerous. The Nyamwezi caravan labour was cheaper than slave porters, and was seen as a way to proving manhood as initiation for young men.

A complex exchange network soon developed between the East African hinterland and the Swahili coast, leading to the introduction of rice cultivation in the interior in those areas under Arab presence and dominion, such as Tabora, Nungwe, in modern-day northern Congo, and in nearby Kasongo. On the coasts of the continent, on the contrary, local societies experienced significant changes due to the massive influx of slaves from the interior and of Arabs and Asians from abroad. Tabora, a key site on the commercial route towards the heart of the continent, practically became an Arab town, with a considerable Baloch presence. Thus, multiple differences developed between the cultural identities of the coast and the islands, on the one hand, and the interior of the continent on the other, where, from the third decade of the nineteenth century onwards, the opening up of caravan routes wrought a revolution in economic, social and cultural terms. The maritime ports of the Swahili coast had always been sustained by intimate interaction with the non-Muslims of their rural hinterlands, and this contributed also to the consolidation of the coastal identity. Nevertheless, the Unyamwezi, the heart of the ivory trade and the home of most male caravan porters, was not a major source of slaves. Rather, it was a region that imported slaves. Caravans arrived at the coast usually in September and porters announced their approach by blowing horns and beating drums. The coastal Swahili economy prior to the Omani Arab immigration was structured on the basis of three different settlement models: 1) patrician towns, 2) rural towns without slaves which lived mainly on fishing and the produce of small homesteads, and 3) areas used for pasture and inhabited by non-Swahili groups such as the Zaramo and the Mijikenda, the Oromo and the Somali. In the eighteenth century, these groups threatened the hegemony of the Swahili patrician families in the towns, obliging them to defend themselves with military force. Relations between the coastal Swahili communities and the East African hinterland were conducted on a personal basis, relying on use of the same language and reciprocal trust in commercial activities, the products from the interior consisted mainly of iron, salt and copper, whilst the coastal products most in demand were ivory, slaves and gold.

Another important item destined to alter the power balances was represented by firearms. During the first half of the nineteenth century matchlocks began to appear in the hands of Omani troops - composed also of Baloch soldiers - who imported them from the Ottoman Empire and from Europe. As is well known, Omani interests did not converge only on the Island of Zanzibar and on the seaboard of the mainland in front of it; the Al Bu Sa'id, and their Baloch troops, moved down to Mozambique. Tabora, near the heart of Unyamwezi, as we have seen above, became an Arab town together with Ujiji. Here Baloch soldiers settled, intermarried, and soon became powerful figures. There were obviously considerable modifications in the traditional elite patterns of power relationships, where client-patronage perspectives were never to be the same, and where new actors were destined to emerge on the new Indian Ocean scenario in its connections with the East African hinterland. Everybody could share this ambition but at the same time new tensions were introduced between Swahili rich families, struggling to preserve their precarious domination, and the demand of the parvenus on whose support they relied.¹⁸ In the Indian Ocean millions of people of African origin may have moved to Asian coasts, to India, and to the Gulf as free people as well as slaves - more than 70% (about 1500) of soldiers in Oman were African from East Africa - and Asians were moved to Africa and South East Asia as slaves, or moved as traders or indentured labourers.

¹⁸ J. Glassman. 1995. *Feasts and Riot: Revelry, Rebellion, and Popular Consciousness on the Swahili Coast, 1856-1888*, Portsmouth and London, Heinemann/James Currey.

While the Baloch moved as soldiers, as bodyguards to the Omani Sultans, they represented with their firearms their military and defensive strength in East Africa. Later on, they settled and started different economic activities. The Baloch occasionally did acquire social status, while on the South-Central Asian coasts they were themselves enslaved by other groups in more powerful positions.

Thanks to the expansion of Zanzibar trade, and to a growing political influence in the interior of Tanganyika, Baloch squadrons were dispatched to Tabora in central Tanzania and Kigoma on Lake Tanganyika. In 1873, about half of the Omani Sultan's 3000 troops engaged in the war in Unyanyembe against the Nyamwezi ruler chief Mirambo were *Mabulushi* and Washihiri soldiers. Some Baloch soldiers joined the trade caravans as guards and reached the Congo with the famous slave and ivory trader Tippu Tipp.

As a result of the scramble and colonization of East Africa, the former armed forces of Zanzibar were integrated into the British forces in Kenya and Zanzibar, and into the German forces in Tanganyika. The British had as early as 1876 used a *Bulushi* contingent on a British warship to help the third Omani Sultan Sayyid Barghash Al Bu Sa'id of Zanzibar (r. 1870-88) to defeat a rebellion in Kilwa further south on the coast caused by decree to forbid the slave trade in the Sultan's Dominions. Since Kenya was a British Protectorate on the coast, leased from Zanzibar, and a Crown colony in the interior, Baloch soldiers remained in service mostly on the coast, concentrated in Mombasa and Zanzibar.

Throughout the nineteenth century the shame and humiliation of the slave trade in East Africa had been imposed and exploited by numerous social groups for many lucrative purposes mainly originating from southern Arabia and Western India. The Baloch were naturally part of this framework. In this regard, the British explorer Stanley wrote:

*'... this personage with a long trailing turban, was Jemadar Esau, commander of the Zanzibar force of soldiers, police, or Baluch gendarmes stationed at Bagamoyo. He had accompanied Speke and Grant a good distance into the interior, and they had rewarded him liberally. He took upon himself the responsibility of assisting in the debarkation of the Expedition, and unworthy as was his appearance, disgraceful as he was in his filth, I here commend him for his influence over the rabble to all future East African travellers ...'*¹⁹

And from another British testimony by Lieutenant General R.S.S. Baden-Powell:

*'... The first visitor from the outer world to come into the Uganda was a Baluch soldier, named Isau bin Hussein, of Zanzibar, who, in 1849 or in 1850, flying from his creditors, finally reached the court of Suna, King of Uganda. On account of his beard they named him 'Muzagaya' ('The Hairy One'), and he became a power in the land. Through him the people there first heard of the Arabs and of white men, of whose existence only vague reports, treated as fairy tales, had hitherto reached them. The rumour arose among them that they too were originally descended from a white race ...'*²⁰

During the second half of the nineteenth century, the growing effectiveness of British measures aimed at abolition caused a reduction in the availability of East African slaves. This lack was, however, partly compensated for by Asiatic slaves, as shown by the commerce in Asian people from the coast of Makran-Balochistan destined to be sold in the squares and in the ports of Arabia. And this was one of the alternative slave routes in the Indian Ocean.

¹⁹ H. M. Stanley. 1890. In *Darkest Africa*, Vol. 1; or, *The quest, rescue and retreat of Emin, governor of Equatoria*, New York, Scribner's Sons: 50-67.

²⁰ R. S. S. Baden-Powell. 1907. *Sketches in Mafeking and East Africa*, London, Smith Elder and Co. *passim*.

Conclusion

In the Indian Ocean millions of people of African origin may have moved to Asian coasts, to India and to the Gulf as free people as well as slaves – more than 70% (about 1500) of soldiers in Oman were African from East Africa – and Asians were moved to Africa and South East Asia as slaves or moved as traders or indentured labourers. The Baloch first moved as soldiers, and as body guards to the Omani Sultans, and represented with their firearms their military and defensive strength in East Africa. Later on, they settled and became involved in different economic activities. Thus the Baloch acquired a social status, while on the South-Central Asian coasts they were enslaved by other groups in more powerful positions.

With the expansion of Zanzibar trade and its growing political influence in the interior of Tanganyika, Baloch squadrons were dispatched to Tabora in central Tanzania and Kigoma on Lake Tanganyika. In 1873 about half of the Omani Sultan's 3000 troops engaged in the war in Unyanyembe against the Nyamwezi ruler chief Mirambo were *Bulushi* and *Shihiri* soldiers. Some Baloch soldiers joined the trade caravans as guards and reached the Congo with the legendary slave and ivory trader Tippu Tipp. Later, most Baloch in Kenya and Tanzania were self-employed as traders or civil servants of all kinds, though they continued to live mostly in their old traditional Baloch quarters which had now become urban dwelling areas because of the expansion of towns. Some Baloch also moved to Uganda with the Indians/South Asians, and a few dozen of them served in the British army or in the police forces of East Africa. Some of them later moved further to Namibia. Today the largest concentration of Baloch in East Africa is in old town Mombasa where there is the famous Balochi Street and the Baloch Mosque next to the General Post Office. It is worth noting that the exact number of Baloch, whether old settlers and their descendants or new arrivals, is difficult to determine since no census in Tanzania and Kenya has taken into account such information.

The presence of the Baloch on the Swahili coast and in the East African Great Lakes region was initially deeply connected with the role played by the Omani Sultans. Therefore, they were soldiers within the slave, ivory, and spice trades along the Swahili coast during the nineteenth century which was generally controlled by Omani-Arabs and represented by many diversified groups. The Baloch were part of the endless interplay of power relationships within different societies in the Indian Ocean. The preservation of Baloch cultural and religious identity in East Africa, although restricted to a few small enclaves, was a peculiarity of some descendants of the nineteenth-century Asian soldiers. In this regard, the Baloch presence and influence on East African societies and cultures remain an ongoing research issue.

Zilo and Zahula

Culinary traditions and trade in the western Indian Ocean

Harriet Joseph Ottenheimer

Kansas State University
E-Mail: harriet@ottenheimer.com

Abstract

Food habits, like languages, are complexly patterned and change slowly over time. New foods may be assimilated into existing cuisines but they must be adapted to (or modify) existing structural patterns. Centuries of maritime travel and trade in the Indian Ocean have resulted in a complex network of culinary traditions. Analyzing the cuisines of the Comoro Islands this paper proposes a history of culinary contact and change in the Indian Ocean region. It traces the movement of foodstuffs and food preparations from East Africa, the Middle East (especially 13th century Persia), Madagascar, India, Malaysia, and Polynesia due to maritime trade and it provides important historical and anthropological insights into the range and intensity of contact between and among maritime peoples of the Indian Ocean.

Culinary Traditions

Culinary traditions, like languages, change slowly. Also known as ‘foodways’, culinary traditions share other characteristics with languages. They are patterned, for example, with the patterns forming basic grammars. Such grammars, in turn exert structural pressure on borrowed elements, controlling whether items will be assimilated whole or modified to fit into existing patterns (Douglas 1971, Lehrer 1969). Consider the Swahili word, *safari* (Swahili plural *zisafari*) for example. Adopted into English, the plural becomes *safaris* (the final <s> being pronounced [z]), in keeping with English pluralization patterns. Now consider the English word *police*. Adopted into Comorian Shinzwani and adjusted to fit Shinzwani’s CV syllabic structure it becomes *pulisi*. At the same time the plural becomes *mavulisi*, in keeping with Shinzwani pluralization patterns (Ottenheimer, H. 2011)

It is much the same with foods and foodways. The hard crackers known as *sea bread* (see figure 1) or *sea biscuits*, were probably introduced into Comorian cuisine in the nineteenth century, most likely by the whaling ships that used to re-provision in the Comoro Islands at that time. Sea bread was made with flour, salt, and water, and was baked at least two, and sometimes four, times to insure hardness and transportability. When Comorians adopted sea bread into their cuisine they substituted coconut milk for water, and frying in oil for baking. Additionally, the English word *bread* became *beredi* (that CV



FIGURE 1. OLDEST SHIP BISCUIT. KRONBORG, DENMARK. CREDIT: https://commons.wikimedia.org/wiki/File:Oldest_ship_biscuit-Kronborg-DK.JPG



FIGURE 2. MABEREDI, DOMONI, COMORO ISLANDS. CREDIT: HARRIET J. OTTENHEIMER

syllabic structure again) and the plural *maberedi*. Today *beredi* is a common element in Comorian cuisine (see figure 2).

The transition of (*sea*) bread into *beredi* illustrates two basic principles in culinary anthropology. One is that specific food items, and even ideas about foods, can be transmitted easily enough by traders and visitors; as with linguistic introductions, such new items are generally modified to fit the local grammar. The other principle is that the transmission of complete and accurate recipes requires more intensive contact. In other words, traders can introduce new foods, or bring

home tales of foods they have tasted elsewhere, but the recipes for those foods need to be introduced by those who know how to prepare them. The differences between English *sea bread* and Comorian *beredi*, for example, indicate transmission by visiting traders, not by English cooks settling in the Comoros. Armed with an understanding of these principles it should be possible to construct an accurate history of maritime trade and contact in the Indian Ocean from an analysis of the varied food traditions in the region. This paper is an attempt to begin such an analysis by focusing on a few specific Comorian food traditions and detailing their regional connections and histories.

This is actually a more difficult project than it seems. While we do know quite a bit about the history of many individual foods and spices, from origin through domestication to distribution, there is still very little research on actual culinary practices in this region. There are descriptions of foods in the travel writings of explorers and traders such as Abraham bin Yiju (1120-1160), Ibn Batutta (1325-1356), Ma Huan (1413-1431), and even Marco Polo (1271-1295) but they tend to describe the ingredients that were traded or the dishes that were served at the tables of kings, shahs, caliphs and sultans rather than everyday cuisines of the regions they traversed (see Gordon 2008). Contemporary cookbooks also tend to ignore basic everyday foods. With the exception of a very few anthropological descriptions, such as Richards' 1939 work on Bemba cuisine, and Osseo-Assare's 2005 survey of African food culture, descriptions of average everyday meals, of basic preparation styles, or of 'foodways' are practically nonexistent in the region.

My own ongoing analysis of the culinary traditions of the Comoro Islands, and in particular of the trading town of Domoni on the island of Anjouan (or Nzwani) suggests an alternative approach. Comoro Islanders have been participants in the Indian Ocean maritime trading network for centuries (see Ottenheimer, M. 1979), thus it stands to reason that Comorian foodways should reflect these years of trade and contract. Daily menus, specific preparation styles and flavor principles, and even specific dishes suggest possible population movements beyond the simple transfer of individual ingredients. So, armed with nearly fifty years of research in the Comoro Islands, and with a deeply analyzed collection of over 100 Comorian recipes, and (perhaps most importantly) with much time spent in Comorian kitchens and at Comorian tables, I intend, in this paper, to make a few modest observations (and raise some questions) regarding food, trade, and population movements in the Indian Ocean.

An analysis of basic meal types in Domoni will get us started. There are two of these: *zilo* and *zahula*. These can be translated as ‘rice meals’ and ‘pot meals’ or ‘stews’ (see figures 3 and 4). Rice meals (*zilo*) are comprised of cooked rice (also called *zilo*) and a variety of accompaniments (*zireo*). Accompaniments include spiced sauces (*mtsuzi*) of meats (*nyama*), legumes (*nkundre*), and vegetables. Meats might include beef (*nyombe*), fish (*nfi*), chicken (*nkuhu*) goat (*mbuzi*), or sheep (*ngonzi*). Mung beans (*ntsanzi*) and pigeon peas (*ntsuzi*) are common legumes. Vegetables include pumpkin (*ntrango*) and eggplant (*demba*). Every rice meal is accompanied by a chili-based spice paste (*putu*), and a salsa-like sauce of tomatoes and onions (*ntchari*). Occasionally pickles of green mango may be added if available (also called *ntchari*). Rice meals are generally eaten in the evenings.

Pot meals or stews are one-pot dishes based on starches such as sweet manioc (*mhogo*), breadfruit (*vuriapan*), yam (*shihazi*), taro (*jimbi*), potatoes (*batata*) or green bananas (*ntrovi*). Alternatively legumes may form the base of a pot meal. Small amounts of beef, goat or fish may be added to a pot meal. Side dishes can include additional pieces of fried, roasted, or boiled starches. Fried fish or chicken can also appear as a side dish for a pot meal and chili-based spice pastes are often included on the table as well. Pot meals are generally eaten at midday.

Whence these two different meal traditions? The answers may be found by examining their actual preparations.

For a pot-meal or stew everything is boiled together. In water. Slower-cooking foods, such as yams or dried beans, are put into the pot first. Faster-cooking foods, such as green bananas, or boiled pieces of meat or fish, are added later. When all the ingredients are nearly cooked through, coconut milk and salt are added. The whole is brought to a rolling boil and then removed from the fire. Lime juice is then added and the stew is ladled into large tureens and brought to the table. Side dishes include fried starches such as manioc, breadfruit, or green bananas and fried pieces of fish which have been coated first with a simple spice paste of ground onion, salt, and pepper.

For an antecedent of this kind of stew-based meal we need to consider sub-Saharan African relish preparations (Bertelson 2009a,b, McCann 2009, Osseo-Assare 2005, Richards 1939). African relishes are



FIGURE 3 - ZILO (RICE-BASED) MEAL, DOMONI, COMORO ISLANDS.
CREDIT: HARRIET J. OTTENHEIMER



FIGURE 4. ZAHULA (STEW OR POT-MEAL), DOMONI, COMORO ISLANDS.
CREDIT: HARRIET J. OTTENHEIMER

soups or stews of beans or greens. They are served with yam, corn, or manioc pastes such as *fufu* (Twi, Ewe, Yoruba), *ugali* (Swahili), or *nsima/nshima* (Malawi, Zambia). The beans or chopped (or pounded) greens are cooked in water, with bits of meat if available, and with groundnut oil added near the end of the cooking time for added flavor (see Richards 1939 for traditional Bemba examples). The coconut milk that is added to a Comorian stew is probably similar in function to the groundnut oil added to African relishes. It is possible that Comorian stews are based on African relish recipes. But Comorian stews are not relishes to be eaten with starch pastes. Already rich in starch, they can be eaten on their own, with spoons. In spite of this, other starches are sliced and then fried (or occasionally roasted or even boiled) and served alongside the stew. And even if there are small amounts of meat incorporated into the stew there is generally some fried fish on the table as well. Although I was given a recipe for manioc *nkima*, or starch paste, in Domoni I have never seen it prepared or eaten in over forty years of field research there.

There are two basic approaches to preparing the sauces for a rice meal. One involves coconut milk, the other water or tomatoes. A coconut milk preparation requires cooking vegetables or meats beforehand, then warming the coconut milk and adding the pre-cooked ingredients and gently simmering the milk until it is absorbed into the primary ingredients. More interesting for our purposes are the water and tomato preparations. Here the first step is to grind onion (*shirungu*) and spices (*masala*) together into a thick paste and to rub this paste onto pieces of raw (or cooked) meat (beef, chicken, fish, goat, sheep), or to mix it in to beans or vegetables, before cooking. The most commonly used spices include ginger (*singizuu*), turmeric (*dzindzanu*), cardamom (*hiliki*), cumin (*hawadji*), black pepper (*vilivili*), chili (*putu*), and occasionally also cinnamon (*mdarasine*). Once the spice paste has been prepared and rubbed onto the meat or blended in with the beans/vegetables the cooking can begin. First, paper-thin onion slices are sautéed in cooking oil (*mata*); this is said to ‘flavor’ the oil and some cooks remove the onion slices from the oil once they are cooked. Next, sliced tomatoes (*tamati*)—or a few spoonfuls of tomato paste—are added to the pan and sautéed. This step can be skipped if desired. Then the spiced meat is added to the pan and browned. If vegetables or legumes are being used instead of meat then they are added and sautéed until the spices in the paste have begun to cook. The final step is to add some water to the pan and then to cover and simmer until done. Coconut milk (*dzia la nadzi*) is rarely used in this kind of preparation. Cooking a sauce of coconut milk requires heating the coconut milk in a pan and adding the spiced meats or vegetables/legumes to the warmed milk, then simmering gently until the milk has been absorbed. In general, items cooked in coconut milk are less complexly spiced than for tomato or water-based sauces. Sometimes salt or pepper or onion form the only spices used in a coconut milk sauce.

Interestingly, it is not easy to find good precursors of either of these kinds of preparations anywhere in the Indian Ocean region. The most difficult sticking point is the use of an onion-based spice paste to coat the meats, legumes, or vegetables.

In Arabic cuisines meat is generally sautéed first, then spices are added, and then liquid (usually water) is added last. Some spices, such as turmeric, cumin, cardamom and cinnamon, are similar to those used in Comorian *zireo* (sauces). Others, such as saffron and sumac are not used in the Comoros. A set of recipes from 13th century Baghdad includes two types of meat preparations. In one the meat is cut up and boiled dry, then spices are added, then nuts, dried fruits, fruit juice or vinegar, and even honey are added. In the other, meat is cut up and fried, then spices are added and fried, and then liquid is added to make a stew (Arberry 1939:21-47, Laudan 2013). Neither of these preparations involves coating meat with a spice paste before simmering as in Domoni. Generally, in Arabic and Arabic-influenced cuisines, spice pastes are only applied to raw meats if they are then going to be grilled in shishkebab style. Otherwise raw meat is cooked first, before spices and liquids are added to the pot. If we are going to find a source for the practice of coating raw meat with a spice paste we will have to search elsewhere.

India is another potential contributor to Comorian sauce preparations but in Indian cuisines the spices are sautéed or ‘sweated’ first, then meat or vegetables are added for cooking, and then finally liquid (most often water) is added for simmering (Iyer 1912, Ramachandran 2007). Only in the Mughal influenced areas of northern India can any preparations be found which involve coating meat with a spice paste before sauteeing it for stewing (Holkar and Holkar 1975), and, as in most cookbooks, there is no indication whether this is a standard basic daily kind of preparation or a special preparation for a special event.

The fact that Arabic, Indian, and Comorian sauces for rice all use similar spices but different preparations, suggests that some or all of these spices were introduced into the Comoros by traders, perhaps with descriptions of how they were used in their cuisines of origin, and then incorporated into existing indigenous culinary grammars by Comorian cooks. It also suggests that the practice of coating meat prior to sauteeing and simmering it into a sauce, to be eaten with rice, is a basic element of Comorian culinary grammar.

This seems to be confirmed in a rather roundabout way by considering the way in which one-pot stews may have come to the Comoros. Recall that Comorian one-pot stews are reminiscent of East African relishes in preparation. The difference appears to be that while the African one-pot stew is a relish, to be eaten with a starchy gruel or paste, the Comorian one-pot stew is a main dish which may be accompanied by fried pieces of starchy roots, green bananas, and fish. The similarity of preparation implies the movement of cooks from Africa—most likely Eastern or Southern—to the Comoros. Coconut can provide milk for cooking, as well as oil for frying. It would have been easy for these immigrant cooks to adopt coconut milk in place of groundnut oil. It would have been even easier for them to have begun frying slices of starchy roots rather than continuing the time-consuming and labor-intensive methods of pounding them into pastes. And although it might still be easier to pop a piece of fish into a relish pot, it was not much more difficult to pop that same piece of fish into the pan in which you were already frying slices of manioc or green bananas. But remember that Comorians coat their fish, like other meats, with an onion-based spice paste before cooking it. The spice paste for frying fish to accompany a stew-based meal is generally made up of onion (*shirungu*), salt (*munyo*), and black pepper (*vilivili*).

It appears, then, that coating raw fish with a simple spice paste and then frying it in coconut oil is a basic element of Comorian culinary grammar (see figure 5 – basic fried fish). If this is the case, then it is easy to see how the Indian and Arabian spices brought home by Comorian traders could have been incorporated into this grammar. If these same traders were to describe the stews and curries they had seen in their travels and their wives and daughters were to attempt to reproduce these exotic dishes at home then the best way to accomplish this would be to just add liquids—



FIGURE 5. FRIED FISH, DOMONI, COMORO ISLANDS. CREDIT: HARRIET J. OTTENHEIMER



FIGURE 6. FISH IN TOMATO SAUCE (ZIREO), DOMONI, COMORO ISLANDS.
CREDIT: HARRIET J. OTTENHEIMER

century Persian cookbook there is a category of meat dishes which is referred to as ‘milk dishes’. In one of these, meat is boiled until done and then added to heated curdled milk (yogurt, perhaps?) to which salt, lemon, and mint have been added. In the others, the meat is cooked first, using spices, and then milk is added to the cooked meat, along with garlic or mint. The former is similar to the coconut milk preparations of Domoni, the latter to yogurt preparations in India. Most similar of all is a Malayan ‘basic curry sauce’ preparation in which coconut milk is cooked until thick, along with a ginger-onion-chili spice paste, after which raw fish or vegetables are added and cooked (Firth 1977:188). In a Comorian coconut milk preparation the fish would be pre-cooked and the spices might be simpler but otherwise the two recipes are nearly identical.

We can conclude, then, that early settlers in the Comoros had to be people who knew how to extract milk and oil from coconuts, and who did not cook meat without first applying an onion/salt/pepper rub to it. That later settlers brought the idea of starch paste and relish to the Comoros and then abandoned labor-intensive starch pastes in favor of easier-to-prepare fried and roasted starches. Fried and roasted



FIGURE 7. MATABA WITH FISH AND RICE, DOMONI, COMORO ISLANDS. CREDIT:
HARRIET J. OTTENHEIMER

water or, later, tomatoes—to the spiced, fried, meats to create appropriate-tasting sauces to eat with existing starches, or with the rice that the traders might have brought home (see figure 6). Thus the addition of rice-based meals with curry-like sauces to the Comorian menu.

The idea of cooking meat or vegetables in sauces of spiced coconut milk is an even more elusive pattern. In Domoni this involves heating and spicing the milk and then adding pre-cooked (boiled in water) meat or vegetables to it. One possible source for this may be South India as preparations with coconut milk are quite common in that region. Persia is another possible source. In Al-Masudi’s 13th

meats and fishes could also be added to the menu if available. Still later, traders going to and coming from India probably brought rice—even easier to prepare than fried and roasted starches—along with descriptions of the curries that could be prepared to be eaten with this new starch. These traders could have also brought all of the spices necessary, Comorian cooks would have incorporated the new spices into the existing onion/salt/pepper spice rub and curry-style sauces would have been developed to accompany the rice. The daily menu probably split into two at that time: fried/roasted starches, pot-based stews, and fried/roasted meat/fish as a noon meal; rice and curry-style sauces as an evening meal.

The development of Comorian *mataba*, as an accompaniment to rice, offers strong support to this hypothesis. A manioc leaf relish (see figure 7), *mataba* is prepared by pounding and shredding manioc leaves in a mortar and pestle, then adding an onion/salt/chili spice paste to the leaves and simmering them in coconut milk until the milk has been absorbed into the leaves and the leaves are tender. People who cannot afford any other food often get by on rice and *mataba*.

Although *mataba* is prepared with manioc leaves—an item which does not appear to have reached the Comoros until the very late fifteen-hundreds—and it is a dry relish, rather than the more typical soupy/saucy African relishes, it is clearly a version of African relish dishes. It probably developed sometime after the fifteenth century, when both rice and manioc presumably would have been introduced to the islands. African immigrants to the Comoros, encountering Comorians cooking with coconut milk, could easily have substituted coconut milk for water in the preparation of relish dishes. We may never know why Comorian cooks began cooking their manioc relishes to the drier consistency currently favored in the Comoros but it certainly goes well with rice.

The link between African relishes—*mpondu* (Lingala), *sakasaka* (KiKongo), or *sombe* (KiSwahili)—and Comorian *mataba* is even stronger than the link between African relishes and Comorian one-pot stews. In some ways, Comorian *mataba* resembles African relishes even more than one-pot Comorian stews do. *Mataba*, however, is cooked to a much drier state than an African relish is cooked. Preparation of an African relish can involve either cutting or pounding of the greens. Comorian *mataba* involves only pounding. African relish preparations are seasoned with salt and/or chili. Comorian *mataba* is seasoned with onions, salt, and chili. African relish preparations are boiled in water and flavored at the end of the cooking process with groundnut oil or (in west Africa) peanut butter. Comorian *mataba* is simmered in coconut milk; the oil of the coconut milk flavors the *mataba* while it is simmering, rather than being added in the end.

Only in the *matapa* of Mozambique do we find the use of coconut milk as the cooking liquid (see figure 8). But unlike the Comorian *mataba*, and in keeping with the generic African preparation, Mozambican *matapa* is finished with fish or shrimp (or even meat) and quite often tomatoes are added to the mix while boiling. Many *matapa* recipes also include ground peanuts.

Malagasy preparations look more similar to Comorian ones (see figure 9). As in the Comoros the greens are pounded, not sliced, before cooking. But coconut milk is only used along the coasts. Water, with some oil, is the primary cooking liquid in the highlands. Pork or other fatty meat is boiled along with the manioc to add extra fat. The dish, called *ravitoto*, is eaten with rice and is considered ‘comfort food’ (Ramiamanana 1977).

Two Indonesian manioc leaf stews involve coconut milk and both are eaten with rice but neither of them involve pounding. Rather the leaves are boiled and sliced, or sliced and sauteed prior to simmering in coconut milk (see figure 10).

Mataba, *matapa*, *ravitoto*, and similar preparations don’t often get into



FIGURE 8. MOZAMBIKAN MATAPA. CREDIT: [HTTP://TROPICALFRUITFORUM.COM/INDEX.PHP?TOPIC=3185.0](http://TROPICALFRUITFORUM.COM/INDEX.PHP?TOPIC=3185.0)



FIGURE 9. MALAGASY RAVITOTO. CREDIT: [HTTP://GEO3C.WIKISPACES.COM/RICA+MERIDIONALE+Bis?responseToken=0a11f72b054b0f66a225fd41f1cc420a6](http://geo3c.wikispaces.com/RICA+MERIDIONALE+Bis?responseToken=0a11f72b054b0f66a225fd41f1cc420a6)



FIGURE 10. GULAI DAUN SINGKONG (MANIOC LEAVES), INDONESIA. CREDIT: [HTTP://DAILYCOOKINGQUEST.COM/BY-CUISINE/INDONESIAN/GULAI-DAUN-SINGKONG-CASSAVA-LEAVES-STEW](http://dailycookingquest.com/by-cuisine/indonesian/gulai-daun-singkong-cassava-leaves-stew)

cookbooks. They are too humble. Too basic. But anthropologists tend to notice the basics of daily life and so we owe it to Rosemary Firth (1977:189) to have noticed, and recorded, the preparation of a possibly similar dish in a Kelantang fishing village in Malaya. A green leafy vegetable is boiled, then strained, chopped and mixed with onions, garlic and shredded fish, and then finally simmered in coconut milk. The use of fish is intriguing as it makes this preparation seem more like the Mozambican *matapa* than the Comorian *mataba*, Malagasy *ravitoto*, or Indonesian manioc leaf stews..

It is now acknowledged that coconut most likely originated in Melanesia, Indonesia, and/or Australasia in a coral atoll ecosystem. It was most likely spread from there by Austronesian peoples. There are two genetically distinct subpopulations of coconut: one in the Pacific Ocean and one which developed in the Indian Ocean; they became admixed in Madagascar and coastal east Africa (but not in the Seychelles), a detail which corresponds with the known trade routes of Austronesian sailors.

One other detail worth noting is the fact that Comorian coconut scrapers are nearly identical to Pacific coconut scrapers (Ellen Sieber: Personal communication).

So what can we conclude from all of this? Perhaps that the Malayo-Polynesian settlers in the western Indian Ocean brought coconut scrapers and the knowledge for cooking greens in coconut milk with them to Madagascar and the Comoros. That they began to substitute manioc leaves for whatever greens they were previously using

soon after the Portuguese introduced manioc into the region, and that fish may or may not have been a part of the original preparation. Did Malayo-Polynesians also settle the Mozambique area, introducing the use of coconut milk for cooking liquid there as well? A google search for *mataba/matapa* yields nothing further than the Comoros and Mozambique. If *mataba* or a cognate was a Malayo-Polynesian word for a dish of cooked greens it has long since disappeared from both Madagascar and its original source region. (*Mataba*, by the way, means ‘fat’ in Tagalog.)

I conclude with a brief foray into one other food item. *Shihondro* (see figure 11) falls more under the category of snack than menu item but it is a favorite at weddings and is considered an ideal travel food.

A not-quite brittle spicy candy, it is made by boiling sugar, ginger, black pepper (and occasionally cardamom) with peanuts and sesame seeds to the point where the sugar is beginning to burn. The hot sticky mix is then spread in half-inch thick sheets and smoothed and flattened by rubbing with banana leaves. When it is cool enough to touch it is cut into diamond shapes.

Analysis of the ingredients doesn't help much.

Sugar was first domesticated in tropical southeast Asia and the manufacture of sugar from sugar cane was invented and perfected in India by the early centuries CE. The plant spread to the medieval Islamic world using artificial irrigation by the 12th century. No doubt sugar has been in the Comoros for centuries. (But note that some Comorians prepare *shihondro* with honey and say that that is more traditional.)

Ginger root is indigenous to south China from where it spread to the Spice Islands and other parts of Asia. It was in India by the first century CE and may have been brought to the Comoros by traders traveling to and from there.

Black pepper is native to south India, and is probably the world's most traded spice. (Peppercorns were inserted into the nostrils of Rameses II's corpse in 1213 BCE). It was known in Greece as early as the 4th century BCE and there was an active trade between Egypt and the Malabar coast as early as 30 BCE (the *Periplus* describes annual trade trips to China, SE Asia, and India). The Romans entered the trade next and then, after the fall of Rome, the trade was taken over by Persians and then Arabs who dominated the trade through the Middle Ages until the Portuguese entered the Indian Ocean in 1498. The Dutch entered the Indian Ocean pepper trade in the mid-1600s. Black pepper could have been in the Comoros for centuries.

Peanuts are indigenous to South America and initially were domesticated in Argentina or Bolivia. The oldest peanut specimen dates to 7,600 years ago in Peru. Peanuts had spread as far as Mexico by the time the Spanish arrived there. They were then spread more widely by European traders. Peanuts were easily adopted in West Africa but it should be noted that a similar plant from the same family (the Bambara groundnut) was already in West Africa before European contact. We can presume that the Portuguese spread peanuts (and perhaps their cultivation) into the Indian ocean and the Comoros.

Sesame Seeds are one of the earliest oilseed crops known. Domesticated over 3,000 years ago the commonly cultivated type originated in India. Trade of sesame seeds between Mesopotamia and India was probable by 2000 BCE. There are also many wild species that are native to Africa. There is no reason to assume that they were not also in the Comoros from early times.

What about the preparation of *shihondro*? It is not really a brittle (it is actually cooked beyond brittle stage) but brittles are the closest thing to explore. There are a great many of these, including Brazilian *pé de moleque*, French *croquant*, Georgian *gozinaki*, Bangladeshi *kotkoti*, and Indian *chikki*. Chinese brittles and Greek *pastelis* are mostly sesame seeds and are probably not analogous.



FIGURE 11. SHIHONDRO (SPICED SESAME SEED AND PEANUT CANDY), DOMONI, COMORO ISLANDS. CREDIT: HARRIET J. OTTENHEIMER

All of these preparations appear to be brittles. Those heavy in sesame, especially middle eastern, can be chewy. Comorian brittle is neither brittle nor chewy but slightly granular. The sugar is deliberately cooked past the hard crack stage until it is about to burn. Additionally, none of them make use of the peculiarly Comorian combination of ginger and black pepper. Cardamom is in chewy south Indian balls but it is not a common ingredient in most Comorian *shihondro*. It appears that *shihondro*, while similar to many other confections in the region, is unique both in preparation and flavor combinations. But, as with many of the other preparations we have discussed, these kinds of brittles, in particular the ones designed to function as travel food, are probably too pedestrian to have been noticed by most food writers and researchers.

In conclusion, it is clear that a detailed and thorough analysis of food and foodways in the Comoro Islands can provide important insights into the range and intensity of contact and trade between and among the maritime peoples of the Indian Ocean. This paper has just scratched the surface.

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Traditional Indian Ocean Maritime Trade and Social Organization

Martin Ottenheimer

Kansas State University
E-Mail: martin@ottenheimer.com

The traditional maritime trade in the Indian Ocean was intimately involved with ‘carefully arranged family bonds’ (Goitein 1973: 62; see also p. 13) and the Portuguese early in the 16th century found them so important that they urged their representatives to marry into the local population. Understanding this social organization is crucial to knowing how it was possible for the traditional trade to operate so successfully over the centuries. However, the critical details are absent from the historical records. Thus, a mystery exists. How did the seafaring merchants of the past successfully cross numerous boundaries, spend years in distant lands, trade large amounts of goods, and amass fortunes without the state controlled financial and military institutions introduced by Europeans? Furthermore, there is the question of how the global economy of the traditional maritime trade succeeded without the banks, hotels, restaurants, electronic money transfers, etc. available in modern times. The following description of an unusual pattern of social organization in the Comoro Islands offers a solution to the mystery.

The Comoro Islands are an archipelago of four major islands and several islets located at the northern end of the Mozambique Channel approximately halfway between northern Madagascar and the East African Coast. The Comoros have a long history of involvement in the traditional Indian Ocean maritime trade. Al-Idrisi, in his 12th century geography text, noted that Anjouan, an island in the Comorian archipelago, was involved in the maritime trade (Freeman-Grenville 1966: 19). The medieval Arab navigator and cartographer, Ahmad Ibn Mādjīd, pointed out that Domoni, a city on the coast of the eastside of Anjouan, was an important trade center and locus of several seafaring routes in the western Indian Ocean in the fifteenth century (Grosset-Grange 1978). Domoni is located behind a prominent promontory jutting into the Indian Ocean from the eastern shore of Anjouan. This promontory provides protection from the northerly and southerly prevailing winds for boats anchored near the shore or beached on the sandy beaches nearby. The long, sandy beaches enabled the traditional shallow draft sailing vessels used in the traditional maritime trade to easily load and unload cargo. Because of their strategic location and participation in the Indian Ocean maritime trade, the Comoros became a target of a planned invasion of the islands in 1569 by the Portuguese. They aspired ‘...to conquer them for the crown, because they would be very advantageous, and to build a fortress there and put a strong garrison in it’ (Theal 1899, Vol. 3: 209). This never happened but the threat of an invasion must have been the stimulus for the construction of the extensive wall that once surrounded the city of Domoni. The wall was under construction or being repaired in 1599 when the British navigator, John Davis, anchored nearby and went ashore and visited the ruler of Domoni. He discovered merchants from Arabia and India were, at the same time, also visiting the city. He also discovered that the ruler of the city was a queen (Markham 1880: 138).

In the 1960s, when I first visited Domoni, much of the wall surrounding the city remained standing and, today, a small section is still clearly visible. It was during my first stay that I became aware of the longstanding involvement of the city in international trade. One piece of evidence I discovered was a collection of seventeenth century Japanese Imari plates. The porcelain plates were cemented into the ceiling of the central room of an abandoned merchant’s home in an old section of the city. By the 1970s,

when I returned to Domoni, the Imari plates were no longer in the ceiling and the only indication of their past existence was the presence of shattered fragments lying on the floor of the crumbling residence. By the 1980s, the house was completely demolished and all signs of the Imari ware had disappeared.

By the beginning of this century, due to population increase, political turmoil, and modernization in the Islands much of the evidence for the extensive involvement of Domoni in the traditional maritime trade had disappeared. Most of the stones used in the construction of the city's defensive wall had been removed by the growing number of community members for use in the construction of their homes. A number of documents chronicling the trade had also disappeared and the elders who had participated in maritime trade via sailing vessels had passed away. Fortunately, in the latter half of the last century it was still possible to gather some evidence of Comorian involvement in traditional maritime trade. Construction of the traditional Comorian sailing vessel (*jahazi*) was continuing and the boats still being used in seafaring. I witnessed the loading and transportation of goods and passengers in these sailing vessels and I also traveled in a *jahazi* on a short trip between islands. Sailors were also still using traditional methods to outfit their vessels. On one occasion, I enjoyed watching the fabrication by hand of the mast shrouds of a local sailing vessel. These stout lines were fabricated by the twisting together of coconut fibers into long lengths of rope. Elders in Domoni, furthermore, could still recall the time when *khotias* anchored near Mutsamudu in the main Anjouanese harbor and Indian seamen and merchants came ashore to trade goods and purchase local provisions. In the early part of the last half of the 20th century, one could still find elders who were able to recall their commercial ventures in sailing to ports around the western Indian Ocean and to detail the difficulties and dangers in traveling by traditional sailboats over the seas. One elder, I vividly recall, told of his trials and tribulations being shipwrecked in a storm and staying alive by hanging onto pieces of wreckage. He survived after he was washed ashore on a beach in Tanzania. Comorian men also spoke of successes in which they greatly profited from their business ventures in the seafaring trade. It was their descriptions of life as a seafaring merchant that made me realize that the 'carefully arranged family bonds' used in the commercial enterprises of the traditional maritime trade might have been the matrilocal polygynous system of marriage practiced in the Comoros.

The form of matrilocal polygyny found in the Comoros is unusual and rarely found outside of the Indian Ocean area. At one time, anthropologists claimed it to be so impracticable that it was virtually impossible (Harris 1971: 331, Murdock 1949: 218). The unusual feature of this marriage system is the combination of nonsororal polygyny with matrilocal residence. The combination exists in the Comoros within a larger social context that includes first cousin marriage, lavish wedding ceremonies, and a division of labor by sex that provides Comorian women a large degree of freedom and power. It provides an important clue to why John Davis found the ruler of Domoni in the sixteenth century to be a woman. The following paragraphs provide some details about the social life in Domoni involving this combination of social factors. These details suggest how it was possible for the traditional maritime trade to have been very successful in spite of the absence of modern technology and political organization first introduced by Europeans at the end of the 15th century.

In Domoni, when a man married his first wife, who typically was also from the city of Domoni, their families put on a number of public celebrations. When the man married another wife, no public celebration of the marriage occurred. These marriages were private affairs involving just a *cadhi*, the couple, and, sometimes, close family or friends of the couple. The same was true for a woman. Her first marriage was celebrated in a public ceremony that included gift exchanges, dancing, public speeches, and other ritual events. If she was divorced or her husband perished, any subsequent marriages were private affairs in which there were none of the same rituals and gifts of her first wedding. In spite of this difference in the wedding ceremonies, husbands were

expected to treat their wives as equals. This required the husband to provide equal financial support, equal time, and equal attention to each wife. This placed a burden upon the husbands and I heard numerous complaints about the difficulties in having multiple wives. I vividly remember, in particular, what one husband in Domoni told me about his problems supporting his two wives. He walked by my residence on his daily visits to his wives' households in different sections of the city and often stopped by to visit. One evening, he succinctly described the major causes of the burdens he felt. When the conversation turned to the difference between the marriage patterns in our two cultures, he said to me, 'You are a lucky man, you have only one mother-in-law.' He went on to explain that he could never satisfy the mother of either of his wives that her daughter was receiving the equal treatment she deserved. No matter how hard he tried, the mothers-in-law each accused him of favoring his other wife. Even when he brought half of the fish for dinner that had been cut down along the backbone to avoid a complaint from either household that they got the lesser half (i.e., the tail or the head), his mother-in-law would still complain that her daughter was not being treated fairly. The domestic problems husbands suffered with multiple wives were discussed many years ago by the 19th century East African author and lecturer, Mtoro bin Mwinyi Bakari. He provided advice on how to prevent the problems. In his work on Swahili culture, '*Desturi za Waswahili*.' Mtoro suggested that, 'The customary treatment of two wives should be taught to a man thoroughly, or he should read about it in books. If he does not know it, there will be perpetual trouble' (Mtoro bin Mwinyi Bakari 1982:79).

After a man in Domoni married, his official place of residence changed from that of his mother's household to that of his wife's household. In the system of matrilocal polygyny practiced in the Comoros, a man may marry two or more distantly or unrelated wives. Combining polygyny with matrilocal residence required a husband to reside in the households of all his wives. This was accomplished through a system of rotation in which the husband was supposed spend equal time, effort, and finances in each household. If a man married a second wife, for example, matrilocal residence required him to spend equal time with each wife in her residence. Where men can marry sisters and matrilocal residence is expected, the residences of the wives will often be close to each other; simply apartments in the same building or huts in the same compound. The husband, then, does not have far to go to meet the requirements of matrilocal residence. In the Comoros, however, men cannot marry sisters and their wives will live in separate households often a considerable distance from each other. The separate households of the wives of men in Domoni were located in different sections of a community, different communities on an island, different islands, and as far away as different countries.

Obligated to spend equal time with each wife, husbands often varied the amount of time spent with each one in a direct proportion to the amount of the distance between them. The shorter the distance between the wives' residences, the shorter the period of time a husband spent in each one. Husbands spent only one day in each of the households located in different sections of a community, spent a week in each household located in different cities on an island, and spent a month or more in households located in different parts of the world. Of course, a husband could count on each of his mothers-in-law to question him about whether he was spending the same amount of time with her daughter as he was with his other wife or wives.

Although married men often complained to me about their tribulations combining matrilocal residence with nonsororal polygyny, they also recognized that the combination had a number of benefits. Particularly for those active in seafaring trade, combining matrilocal residence with nonsororal polygyny established local households for the merchants in the various ports they carried out their commercial enterprises. These households provided them with meals, shelter, credit, and the support of a group of related people who could be trusted to watch over their stored goods and maintain their business interests while they were away. Furthermore, by marrying a wife from a distant community,

the merchant established the 'trust and a reputable name' (Gordon 2008: 83) so essential to establishing connections in business ventures. Another consequence of the matrilocal residence pattern was the benefits women received. Husbands provided financial support and were, essentially, visitors in households primarily controlled by women. The wives were the more permanent occupants and also owned the residences making them substantially secure and independent. Married women had a considerable degree of freedom, wealth, and authority.

A major responsibility of a father in Domoni was to construct or renovate a separate residence for each of his wives' daughters to live in once married. This often required a major financial investment for constructing or renovating a stone house and was another burden felt by the males. Traditional houses in Domoni had walls of irregular lava rocks cemented together and varied in size from single-story residences to multi-storied palaces. Their architectural style is similar to the traditional stone residences found along the coast of East Africa with a large, central room, connected smaller rooms, and adjoining courtyard (For details, see Allen 1973, Garlake 1966, and Ottenheimer 1985). The large, central room had a thatched, peaked roof enabling the room to be much larger and possess better air circulation than the other rooms in the house. The central room was the formal dining area and was where guests were entertained. It was decoratively plastered and painted plus its walls contain numerous niches containing valuable imported objects. In 1783, the British orientalist, philologist, and jurist, Sir William Jones, stopped in Domoni on his way to Calcutta and was entertained in the main room of one of the houses. He described it as follows: 'The room was hung with old red cloth and decorated with pieces of porcelain and festoons of English bottles; the lamps were placed on the ground in large sea-shells; and the bed-place was a recess, concealed by a chintz hanging, opposite to the sofa, on which we had been sitting' (Jones 1799: 100). Other rooms in the house were the sleeping quarters for family members and their guests. If the house had one level, the guest room, opening out to a street, could be converted into a store with merchandise sold to neighbors and visitors. This was one means to increase the financial resources of the family. The main entrance to a house was through a massive, carved wooden door that opened into the guest room or directly into the main room in a similar fashion to the traditional stone houses on the East African coast. Multi-storied buildings often had a store and storage areas on the ground floor with living quarters upstairs. Kitchens were located in the courtyards and were essentially open cooking areas protected by a thatched roof.

The stone houses, especially the largest ones, took several years to complete. The exact length of time depended upon the father's ability to accumulate the necessary resources for its construction. The process of construction often began long before the marriage of a man's first daughter so that the residence would be ready at the time of her wedding or soon afterwards. Thus, a common sight in the city was several houses under construction at any one time. The new house eventually became the residence of the man's married daughters and their children, his unmarried daughters, and his wife. It also became the residence of the husband and his sons-in-law when they were not visiting their other wives or away on commercial ventures. Women of the house normally shared the household chores and provided all the occupants with basic provisions. Some also had help from servants or slaves.

The preferred match between potential mates was the marriage of first cousins. The arrangement of this type of marriage began with two brothers discussing the possibility of one of their sons marrying one of the other's daughters. The potential groom was considerably older than the potential bride. He was likely in his thirties and she was in her late teens. The prospective husbands left their mother's residence and, after a period living in a bachelor's quarters, became involved in maritime trade for enough years to amass the wealth to contribute to his future marriage ceremony, to support his new household, and to begin the preparations for his daughters' marriages. If the family members in the households of both brothers agreed with the choices of bride and groom, formal arrangements for the

wedding commenced. Agreement between the families, however, did not guarantee the couple chosen would end up marrying. One of the first steps in the formal preparation of a wedding was a divination ritual to determine if the future prospects for the marriage were favorable. The ritual includes the examination of the horoscopes of the prospective bride and groom. The primary purposes of the divination were to determine whether the two prospective persons were compatible and to predict whether they would produce healthy offspring and have a prosperous household. Cynics pointed out that the rite provided a means by which the plans for a proposed marriage could be aborted when a faction within the families involved did not want the union to take place but could not, or would not, express that publicly without arousing animosities amongst the individuals involved. The divination, in this scenario, would prevent disruption of family harmony, at least on the surface, and the union would not take place.

The marriage of first cousins in the Comoros is not an abnormal social phenomenon. It is found in many parts of the world today and was practiced during the Middle Ages by Jewish seafaring merchants from Egypt, Arabia, and India engaged in the traditional Indian Ocean trade (Goitein and Friedman 2011). Marriages between first cousins were also a common occurrence during the 18th century among the wealthy merchant families in Boston, Massachusetts (Kuper 2009). One advantage of first cousin marriage benefitting merchant families was the retention of wealth within a corporate kinship group. This would help to maintain their finances for major commercial ventures.

Once the families agree to a couple's marriage and the required divination predicts a fruitful marriage, the bride, groom, and their families begin the preparations for a series of wedding ceremonies. As many as two dozen wedding ceremonies take place over a length of time lasting as much as three weeks. During this period, large numbers of guests were invited and provided refreshments, gifts, and entertainment. There were also a series of gift exchanges between the families of the wedding couple. The bride receives her dowry including numerous pieces of valuable jewelry either bought for the occasion or handed down from her relatives. The exact amount of the value of the dowry varies but one example of how valuable these gifts can be was what a bride in the 1960s received during her wedding ceremony in Domoni. She received gold jewelry valued at approximately ten thousand dollars. At the current price of gold, the cost of the same gifts today would be approximately three hundred thousand dollars. I mention the value of the jewelry given to the bride at the wedding ceremony in order to make clear the significance of the marriage ceremony in the traditional maritime trade. There have been critics who view the lavish wedding ceremonies in the Comoros as a waste of finances. But the criticisms do not take into account their social impact nor how the wealth received by brides during the wedding ceremonies would enable them to play an important role in society. Essentially, the gifts provide married women with the resources to finance their male relatives in commercial enterprises. They can participate in the life of the community through receiving the financial means to bankroll her husband's, or other close relative's, commercial ventures in trade. Her assets loaned to a husband, for example, would be the first step in a series of trades for other valuable commodities (rare stones, ivory, rare woods, spices, slaves, animal skins, etc.). In the past, trading continued at various places around the Indian Ocean until her relative earned a considerable profit. Then, upon his return to Domoni, which might not occur for several years, her loan was repaid with interest. The payment could be in cash, jewelry, gems, clothing, etc. Thus, in the traditional maritime trade, the lavish gifts given to a bride in the wedding ceremony played a significant role in the socioeconomic life in the Comoros. It provided support for the commercial ventures of the merchants and, at the same time, established an important part in the traditional trade for a woman. The wedding gifts provided married women the means to act as bankers and store, lend, and increase the portable wealth of a family. Elder women would also use their wealth, on occasion, to become merchants and actively engage directly in the trade themselves. These women opened retail shops in the city and sold the goods purchased with the gifts they received at marriage or with the increased capital they earned as financiers of their relatives' commercial undertakings.

The brief descriptions of life in Domoni discussed above are abstracted from research about the Islands and experiences in the Comoros over the past half century. In recent years, many changes have occurred in the western Indian Ocean and continue to occur today. Just like the rest of the world, rapid technological changes in communication and transportation have had a major impact upon life in the Comoro Islands. Sometimes, these changes came about due to events far from the islands. In the past, for example, maritime trade offered adult males considerable opportunities to accumulate wealth before marriage. These opportunities were provided by the availability of locally constructed sailing vessels and also by foreign vessels often anchoring in Anjouanese waters on their way to southern Africa and Madagascar or, on the reversal of the monsoon winds, on their return to Arabia or India. Comorians could easily engage in trade in distant Asian and Arabian ports as well as in the Comoros and along the East African coast. This changed dramatically with the introduction of steamships, the opening of the Suez canal, and the colonization of the countries in the western Indian Ocean region. The opportunities for Comorian involvement in long-distance maritime trade have greatly diminished. Many male adults in the Islands subsequently have turned to employment as laborers or bookkeepers for French plantation owners, found work in government offices, or grew cash crops, such as cloves, sisal, vanilla, and ylang ylang in order to raise the finances to support themselves, prepare for their weddings, and provide for their families. The life of women has also changed with women attending public schools, becoming trained in professional positions, and finding work in salaried positions outside of the home. Married women in Domoni continue to provide the necessities of family life by maintaining small plots of land to grow food crops, raising the children, caring for the elderly, and performing household chores. They still serve as bankers, as well, providing financial assistance to their male relatives and storing the family wealth not deposited in modern banking institutions. The women of a house also continue to cooperate in their responsibilities and constitute a group with considerable wealth, power, and freedom.

Considered at one time by social scientists to be an impossible pattern of social organization, the combination of nonsororal polygyny and matrilineal residence was not only possible but has played a major role in the successful way of life in the Comoro Islands. On a worldwide scale, to be sure, it is a rare phenomenon and is a minor statistic in the surveys of world social organizational systems. However, when one recognizes that it developed as an adaptation to a commercial system in a maritime environment, the low frequency of its appearance should not discount its importance as a form of social organization. The vast majority of human basic technological systems are land based. Hunting, horticulture, agriculture, and herding patterns have dominated means of survival since the beginning of humans' appearance on Earth. This has led trade and, in particular, maritime trade from being classified as a major techno-economic system in human social evolution. Yet, it has been a fundamental means of supporting numbers of human groups for a very long time in several areas of the world. Since the emergence of the first civilizations over four thousand years ago, maritime trade has played a significant role in human societies, especially among those on the shores of the Indian Ocean. It should be recognized that the traditional maritime trade in the Indian Ocean was a significant socioeconomic endeavor in a global economy long before the introduction of modern technological, economic, and political systems. Furthermore, I suggest, that its success depended upon the rare form of social organization that combined matrilineal residence and nonsororal polygyny.

The Comorian marriage system offers clear proof that matrilineal residence combined with nonsororal polygyny is a feasible means of social organization. This excellent adaptation to the traditional maritime trade of the Indian Ocean provided the essential networks required by the merchants in long distance trade, gave women an important role in the trade, and supported family life for households with husbands absent for lengthy periods of time.

Today, the practice of matrilocal polygyny continues to provide women in the Comoros a degree of freedom, power, and wealth not seen in many other countries. In 2013, the Union of the Comoros; the state consisting of the islands of Anjouan, Grande Comore, and Moheli, received the highest ranking of the 22 members states of the Arab League (including Syria which was suspended in 2011) in the 3rd annual Thomas Reuters Foundation's poll focused on women's rights. Ranking 1st in women's rights in the Arab world can be attributed, at least partially, to their involvement for centuries in the traditional maritime trade. It established the foundation for the present status of women in the Comoros whereby, today, there are three percent (3%) of the national parliament's seats being held by women (World Bank 2011), twenty percent (20%) of politicians in ministerial positions are female (World Bank 2011), and thirty-five percent (35%) of adult women are in the labor force (United Nations 2011). Furthermore, women are usually awarded land and homes in cases of divorce or separation (United States Department of State 2012) and fifty percent (50%) of all inmates are males held for crimes of sexual aggression (United States Department of State 2012).

Evidence indicates that the combination of nonsororal polygyny and matrilocal residence existed in other areas of the Indian Ocean, especially on the western coast of the Indian subcontinent. Research in these locations can broaden our knowledge of these important social factors and their involvement in the traditional Indian Ocean maritime trade. Also, future researchers should be made aware of the pattern of marriage practiced in the Comoros to avoid the incorrect assumption that it was not possible. Instead, it should receive careful attention and be recognized as a form of social organization with the potential of having been a critical factor in the success of the traditional Indian Ocean maritime trade. Furthermore, archaeological research of domestic quarters at sites along the coasts of Africa, Arabia, India, and Persia, should consider the possibility of the combination of matrilocal residence and nonsororal polygyny when interpreting the material remains at these sites. At the very least, I encourage researchers interested in the traditional maritime trade to recognize the need to look for a relationship between maritime trade and social organization. Understanding this association is crucial to solving the mystery of how traditional seafaring trade of the western Indian Ocean became so successful before the introduction of modern commercial, political, and financial institutions.

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Shellfish Exploitation at Kuumbi Cave, Zanzibar (c. 11kya – 20th cen. CE): A Preliminary Study

Akshay Sarathi

University of Wisconsin-Madison
E-Mail: sarathi@wisc.edu

Introduction

The site of Kuumbi Cave (*Pango la Kuumbi*), Zanzibar is significant for the study of East African maritime adaptations because it offers a long (albeit interrupted) cultural sequence that begins roughly 18kya and ends sometime in the 19th/20th century (Shipton et al. 2016; Prendergast et al. 2016). This paper examines marine shellfish exploitation at Kuumbi Cave during three distinct phases of occupation: Phase 1 (16th/17th – 19th/20th centuries CE); Phase 2 (mid/late 1st – mid-2nd millennium CE); and Phase 3 (c.13,040 – 11,340 BP). The object of this paper is to assess whether patterns of marine shellfish exploitation during Phase 2 are statistically different from those in Phases 1 and 3. Phase 2 roughly spans the period generally identified with the gradual development and apogee of the urban Swahili civilization before its disruption by the arrival of the Portuguese (Nurse & Spear 1985; Kusimba 1999; Chami 2009; Fleisher et al. 2015; Shipton et al. 2016). Thus, unique patterns of marine shellfish exploitation at Kuumbi Cave coinciding with the period during which the Swahili civilization developed and flowered (c.500-1500 CE) could imply that the development of the Swahili civilization was not exclusively an urban phenomenon and that its rise and disruption affected subsistence activities even in hinterland sites (see Kusimba 1999 for a further discussion of urban-hinterland relations during the Swahili civilization).

The division of the cultural sequence of Kuumbi Cave into the three phases identified above was accomplished by stacking line graphs depicting temporal changes in the Minimum Number of Individuals (MNI), the weight, and the number of distinct taxa present (the diversity index or NTAXA). The cultural sequence was divided into three periods based on points at which fluctuations in all three variables were observed. Finally, these phases were dated with reference to available published chronologies (Shipton et al. 2016; Chami 2009; Sinclair et al. 2006). The use of statistical tests to confirm the difference between the three phases (which were identified by ‘eyeballing’ time series) is necessary because site formation processes acting on Kuumbi Cave have resulted in a highly-disturbed stratigraphy that does not allow for neatly defined chronological periodization. Thus, the ‘eyeballed’ phases could merely be the product of taphonomic factors or even relics of the sampling methods employed, and require statistical confirmation to have any analytical value.

As will be demonstrated, statistically significant differences were noted only between Phases 2 and 3 rather than between Phases 1 and 2 or Phases 1 and 3, suggesting that the trends in marine shellfish exploitation begun in the mid/late 1st millennium CE continued until the final abandonment of the site in the 20th century. In other words, the period spanning the development of the Swahili civilization

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(c.500-1500 CE) at the site was not characterized by unique patterns of shellfish exploitation as no statistical difference could be found between shellfish exploitation during that period and its successor. At the same time, shellfish exploitation c.13,040-11,340 BP differed from that beginning in the mid/late 1st millennium CE, perhaps reflecting ecological and cultural change in the region. That said, the Kruskal-Wallis tests run for this study revealed that the exploitation of only five taxonomic families changed with statistical significance between Phases 2 and 3, suggesting that ecological changes occurring between the Pleistocene/Holocene transition and the mid/late 1st millennium CE were strong enough to affect human subsistence activities but were limited in effect.

For the purposes of this paper, ‘marine shell’ does not include chiton segments or sea urchin spines because these remains are especially revealed during flotation, which was not completed at the time of this paper’s writing. Future studies will include them, for they are important marine shell remains.

Geographic and Geological Context

Kuumbi is one of many karstic caves formed from the Pleistocene limestone terraces on the southeastern side of the island of Unguja (Zanzibar). Kuumbi likely formed at least as early as the Last Interglacial and developed as a phreatic cavity that was later exposed by the partial collapse of its ceiling (Kourampas et al. 2015; Shipton et al. 2016; Prendergast et al. 2016). Today, there are two sloping entrances on the northeast and southwest, with the former being most commonly used by humans to enter the cave. Kuumbi’s two chambers are amply lit by four openings in the cave’s ceiling which form death traps as described by Brain in his study of African cave taphonomy (Brain 1981). Both chambers slope towards a freshwater spring/well located close to the southwestern entrance.

Today Kuumbi lies roughly 3km from the coast as the crow flies, and the steep eastern continental shelf of Unguja ensures that the cave has never been more than 10km from the coast during its existence (Shipton et al. 2016). Unguja was also periodically linked to the mainland when sea levels dropped enough to drain the channel (35m deep at its shallowest) (GEBCO 2016) that today separates the island from the Tanzanian mainland. Unguja was last connected to the mainland in the Late Pleistocene before rising sea levels at the beginning of the Holocene c.10kya submerged the land bridge (Prendergast et al. 2016).

Cultural Context

The cave today is considered sacred by the inhabitants of the many small towns and villages that dot the island, especially in the south. I was informed by the locals that their ancestors had lived at Kuumbi before moving to the coastal villages of Jambiani and Makunduchi, and perhaps to other locations as well. Elders in both villages recall the lives of their parents and grandparents in the cave, where they lived as maritime hunter-gatherers before moving to the coast for unknown reasons perhaps in the early to mid-20th century (or at least sometime within the living memory of septuagenarians). The people residing around Kuumbi regularly leave offerings for a spirit (a *shetani*) that is believed to live in the cave. In addition to the cave’s status as religious shrine, the coastal forest habitat around it is maintained as an inviolable sacred grove.

The cave is also a popular spot to which tourists visiting the beaches of Jambiani are taken. The local tour guides explain to the tourists how their ancestors, the last hunter gatherers to occupy Kuumbi, found the cave. The most popular story told is this: two lovers, seeking a secluded spot to be intimate found the cave. Post-coitus, the woman playfully threw a stone to the back of the cave, from where a splash was heard when the stone fell into the spring. The couple told others and soon the cave became the home base for a hunter-gatherer group because of its supply of clean drinking water. Another story concerning the cave’s discovery was told to me by one of Jambiani’s elders in passing conversation.

He said that the cave was found by hunters and their dogs as they pursued a small antelope (Kiswahili: *paa*) through the brush. The antelope disappeared into a thicket and the dogs went after it. The hunters followed and to their surprise found that the thicket hid the entrance to a large cave with freshwater. Thus, the cave came to be occupied by his ancestors, concluded the elder.

The cave's importance as a sacred space means that the utmost care must be taken to conduct research with the greatest respect, with permission gained not only from the Revolutionary Government of Zanzibar but also its local caretakers.

Previous Research

The cave's archaeological potential was recognized first by Felix Chami when he visited Jambiani in 2004 as a tourist. When informed of the story of the cave's occupation by hunter gatherers, he decided to excavate the site and assess the antiquity of its occupation. Therefore, he conducted two excavations of the cave in 2005 while a third was conducted in 2006 by Paul Sinclair (Chami 2006; Chami 2009; Sinclair et al. 2006). These excavations sank nine trenches in total, of which the most productive and stratigraphically controlled lay in the larger chamber near the northeastern entrance to the cave. Sinclair's (2006) data have been used in some specialist studies on lithics (Knutsson 2007), and the results of these were reiterated by Chami (2009). However, these studies have been challenged more recently (Shipton et al. 2016).

In 2012, the SEALINKS Project reinvestigated Kuumbi in order to clarify the site's chronology and geoarchaeology (Shipton et al. 2016:205) in particular because both earlier studies (Sinclair et al. 2006; Chami 2009) claimed a possible MSA occupation of the site dating to c.26kya during the Late Pleistocene. Confirming the chronology of the site was necessary due to its claimed antiquity which, if verified, would make it the earliest coastal occupation site thus far discovered in East Africa. The SEALINKS excavations extended Trench 6 (excavated by Chami and Sinclair), thus creating Trench 10. Their research challenged the hypothesis of a pre-20kya occupation of the site (Chami 2009; Chami 2006; Sinclair et al. 2006), but did confirm the Late Pleistocene (post-18kya) occupation of the site. The SEALINKS excavation also contested previous claims (Chami 2009; Chami 2006; Sinclair et al. 2006) for the pre-medieval presence of Indian Ocean trade goods (in the form of glass beads, for instance) and domesticated fauna such as chickens (Shipton et al. 2016). The SEALINKS data have been used to generate faunal reports that examine the role of humans in the extirpation of the island's larger fauna (Prendergast et al. 2016) and the potential use of poison arrows and bone projectile points at Kuumbi Cave (Langley et al. 2016).

Methods

Excavation

My excavations were conducted over the course of a month in July 2014. While I was preparing to excavate the site in 2014, the only excavation report of Kuumbi Cave available was that of Chami and his colleagues (Chami 2009; Sinclair et al. 2006). More recently, the SEALINKS report of the site has been made available (Shipton et al. 2016). I excavated two small trenches (Trenches 11 and 12) near the entrance of the cave, close to Chami's Trenches 8 and 9 (see map) to take advantage of the chronologies Chami (2009) established for nearby trenches. Further, Chami (2009) reported the dense quantities of artifacts retrieved from this part of the cave. My goal was to assess the extent to which marine fauna were exploited by the inhabitants of the site over time. Specialist reports mention marine shell and fish (Chami 2009) found at the site, but do not offer solid taxonomic identifications or scientific quantifications, both of which are needed to effectively assess change over time. My excavations

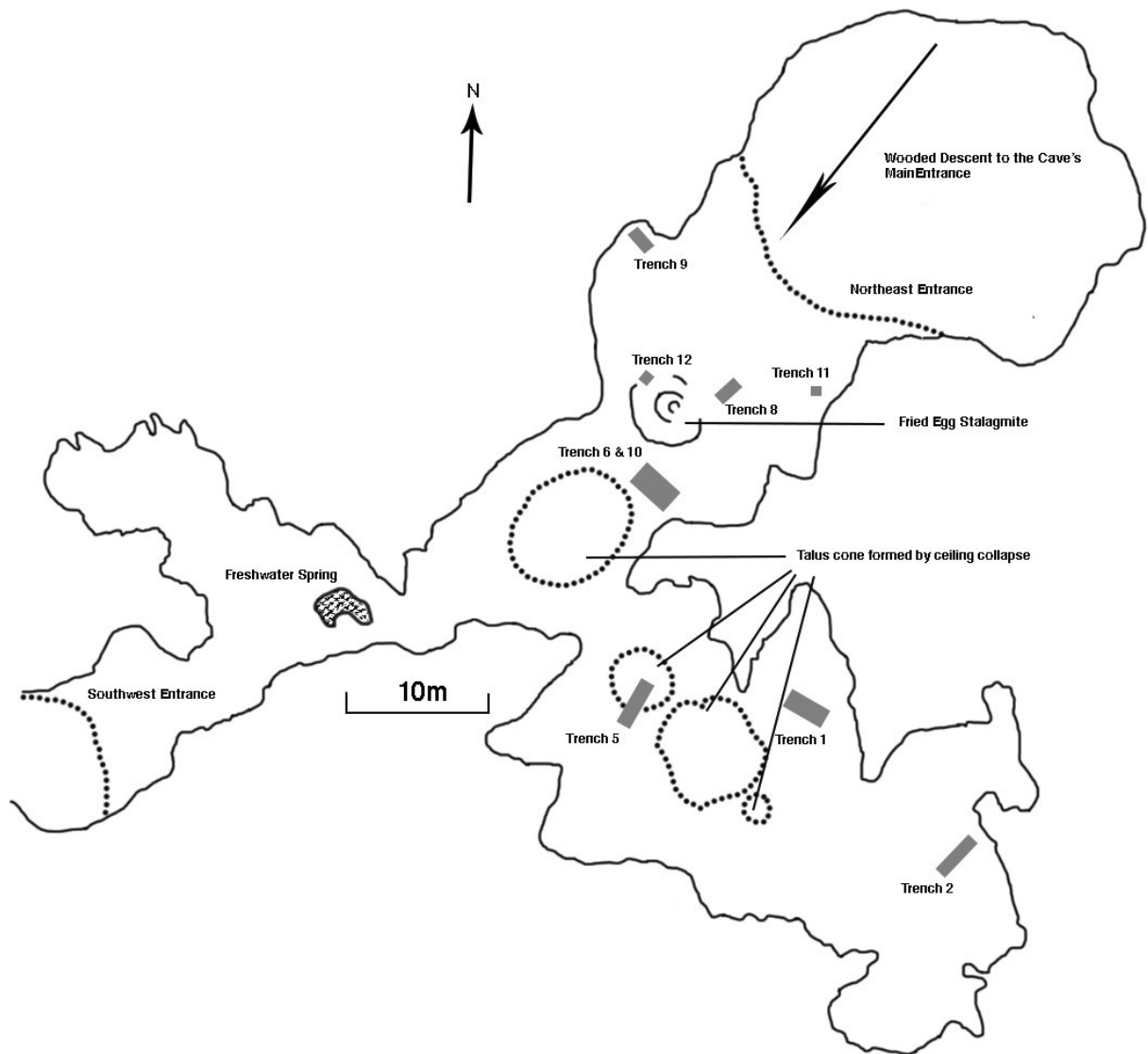


FIGURE 1. MAP OF KUUMBI CAVE, UNGUJA (ZANZIBAR)

consisted of 1mx1m trenches meant to sample the site while aiming for a recovery rate for faunal remains of as close as possible to 100%. Therefore, nearly every bucket of dirt was sieved using screens of <1mm. The larger faunal remains were quickly identified and bagged, while the smaller faunal remains and other materials will be recovered in the future by methodical flotation.

On the whole, the results of my excavation conform closely to those of the SEALINKS Project (Shipton et al. 2016; Langley et al. 2016) rather than those of Chami and Sinclair (Chami 2006; Chami 2009; Sinclair et al. 2006). First, no domestic fauna or Indian Ocean trade materials were discovered in the layers identified by Chami as pre-medieval. Secondly, I did not discover large limestone tools as described by Chami and others (*pace* Knutsson 2007; Sinclair et al. 2006; Chami 2006; Chami 2009). Rather, some rare flakes, broken geometric microliths, and bones with markings suggesting tool use as described by the SEALINKS Project (Shipton et al. 2016; Langley et al. 2016) were discovered. Finally, and most importantly, my excavation methods eschewed sampling to create a baseline faunal dataset for the site and revealed that Chami's (2009) excavations grossly understated the proportional number of marine shells present at the site.

While Trenches 11 and 12 proved extremely rich in artifact density, they forced a consideration of site formation processes that may not have been as pronounced in more secluded parts of the cave. For instance, their location in a region close to the largest entrance of the cave and close to the lip of its overhanging roof meant that much of what I excavated could have washed into the cave from occupation sites yet undiscovered beyond the northeastern entrance and perhaps even atop the roof of the cave. A brief survey conducted by my crew revealed no surface finds; the sediments atop the cave were covered with thick shrubbery and trees while the remainder of the cave's environs revealed some contemporary artifacts (such as plastic bottles), but nothing of significance to this project.

Trench 11 was sunk to the southeast of Trench 8 and Trench 12 to its northwest. Of the two, Trench 12 proved the richer in artifacts and could be extended to a greater depth than Trench 11, which began to be blocked by large rocks at roughly 110cm deep. Trench 12 was excavated to bedrock at 232cm, with few rocks of any size hindering progress. Trench 11 was riddled with more rodent burrows than Trench 12, with an especially large one found 33cm deep. All sediments from these burrows were excavated separately and discarded. Plant roots also affected the stratigraphic integrity of the trenches. Most of these were thin and stringy and were carefully cut away with scissors. With its placement close to the flora beyond the cave's entrance, Trench 11 was more affected by roots than Trench 12. However, Trench 12 was pierced by a large root, which we followed into the trench, leaving it in place and excavating the sediments around it separately for discard. My excavations confirmed the extremely disturbed stratigraphy reported by Chami (2009) and Sinclair et al. (2006). The stratigraphy of both trenches was uniformly grey with some ash or chalky inclusions. Some discernible stratigraphic layers were observed near the top and bottom of both trenches, and these were reddish-brown in color. In neither trench, however, were these reddish-brown layers as artifactually rich as the grey. A final confounding element was the partial collapse of the southeastern wall of Trench 12 during excavation at the 50cm depth. This was likely due to the nature of the fine-grained colluvium that characterizes much of the soil within Kuumbi.

Chami (2009) reported the discovery of human burials and some *in situ* features such as a hearth, but my excavations did not chance upon like discoveries. Dry sieving and flotation did reveal, however, that small pieces of charcoal were embedded in the excavated earth, but so coated with dirt as to make them virtually undetectable except when broken. However, like all previous excavations (Shipton et al. 2016; Chami 2009; Sinclair et al. 2006), the overwhelming majority of the materials I excavated were Giant African Land Snail (*Acatina* sp.) shells. My initial hypothesis was that these were the remains of individuals who had expired naturally within the cave. However, the sheer volume of shells discovered in addition to evidence of their burning suggested that these were purposely brought to the cave for cooking and consumption.

In addition to a few potsherds and beads, a single metal artifact (3.8cm long) was found. Its shape suggests that it was part of the shaft of a projectile, but I am yet to test this hypothesis. The remainder of the artifacts were the bones of non-human fauna, mostly terrestrial, and marine shell. It must be noted that even though only marine shells are considered for this paper, they do not represent all the marine fauna discovered at the site. Some fish bones (primarily vertebrae and a shark tooth) a single fragment of turtle carapace, two sea sponge fragments, and some broken sea urchin spines were discovered as well. Marine shell form ~97% of the marine fauna recovered from trenches 11 and 12.

Faunal Analysis

The marine shells forming the dataset of this study were those recovered from Trenches 11 and 12. All recovered marine shell – fragments and complete individuals – were identified with the aid of a comparative faunal collection generated from specimens gathered in Zanzibar as well as by using

Taxonomic Identification	Level												
	1	2	3	4	5	6	7	8	9	10	11	12	13
<i>Andara</i>								1					
<i>Architectonica(?)</i>				1									
<i>Bursa</i>								1					
<i>Cerithium(?)</i>					1		1	1					
<i>Clypeomorus</i>			1										
<i>Conus</i>		1	1	1	1	1	2	1					
<i>Cypraea</i>	1	1	3	4	5	3	2	1	1	1	1	1	1
<i>Dendropoma</i>									1				
<i>Drupa</i>				1	2	1	1			1			
<i>Gibberulus</i>	1	5	6	15	10	15	10	10	6	5	1		
<i>Latirus</i>						1							
<i>Lentigo</i>					1								
<i>Littorina(?)</i>	3	2	2	3	1	2	6	4	1	3	2		5
<i>Melampus</i>	1												
<i>Trochus(?)</i>			1	3	7	1	2	1	1	2	1	1	
<i>Monoplex</i>			1		1		1	1					
<i>Nerita</i>	13	38	83	63	67	86	112	70	18	70	54	17	34
<i>Ovula</i>						1							
<i>Patella</i>													2
<i>Pleuroploca</i>				2	1	1							
<i>Purpura</i>										1		1	1
<i>Reishia</i>				1									
<i>Solena</i>		1			1	1		1	1				
<i>Tectus</i>							2						
<i>Tellina</i>			1	2	1								
<i>Terebralia</i>	1	1	3	5	9	5	2	2	2	2	1	1	
<i>Thais</i>		1			2	2	1	1		1	1		3
<i>Tridacna</i>					1	1			1				
<i>Turbo</i>	7	20	47	36	31	38	58	45	20	43	14	9	12
<i>Vasum</i>	1	5	6	8	9	7	9	3	3	3	2		
<i>Volema</i>			2	2	3	3	3	1	2				

TABLE 1. THE MNI OF VARIOUS MARINE SHELLFISH GENERA, ORGANIZED BY STRATIGRAPHIC LAYER. LEVEL 1(19TH/20TH CEN.) REPRESENTS THE MOST RECENT LAYER AND LEVEL 13 (C.13KYA) THE OLDEST.

a quantity derived from the NISP, and thus is liable to change when more fragments are discovered during flotation or the extension of earlier trenches.

The MNI for each genus was generated by calculating the number of individual animals necessary to create the number and kinds of Non-Repetitive Elements (NRE) of the shell taxa present in the assemblage. NRE for shells are those features that appear once in a single individual, such as the apex. The method to calculate the MNI using NRE involves identifying the NRE that appears with the highest frequency for a given taxon. Simply put, out of a given set of possible NRE for a taxon, the value of the NRE that is the most common in the archaeological assemblage under study is taken as the MNI. An extended set of possible NREs was employed as restricting the list of possible NREs leads to underestimating the number of taxa and their individuals in an assemblage (Harris et al. 2015) comparability, and replicability. MNI values for archaeological molluscan assemblages are routinely calculated by counting a select range of NREs. The MNI for each taxon is listed in Table 1 by the level in which it was discovered.

Chronology

As noted above, Kuumbi Cave's stratigraphy is complicated, and this makes the interpretation of its archaeological record difficult. First, as noted by Shipton et al. (2016) and Chami (2009), sediments are continually washed into the cave by rainwater. Therefore, material retrieved from sloping surfaces near the northeast entrance (see map), i.e., from trenches 6 and 8-12 are likely to have been affected by erosion and commingled with foreign materials washing into the cave. Further, as mentioned above, the SEALINKS excavations and my own revealed the presence of many abandoned rodent burrows piercing

published guides to marine shell identification (Kensley 1973; Wye 1991; Richmond 2002; Robin 2008; Robin 2011). More individuals (especially sea urchins and chitons) are likely to be discovered in the future when the remainder of the materials are subject to flotation using an Ankara Device (Watson 1976). For this study, however, a total of 2,870 fragments (NISP) of marine shell yielding an MNI of 1440 representing 31 distinct genera were collected and analyzed (Table 1). These specimens were gathered from layers dating from the 19th-20th centuries to the terminal Pleistocene/early Holocene (see Tables 2 and 3).

MNI was preferred over NISP for this analysis because it considers certain variables that NISP does not. Using MNI rather than NISP treats as equal all taxa regardless of the number of fragments represented by each. This equalization takes as a given the possibility that taphonomic and other factors would have acted upon the study to limit the NISP of some taxa while exaggerating that of others (Lyman 2008). This is especially relevant in studies of marine shell that are easily fragmented and scattered beyond the extent of an excavation unit. At the same time, it must be acknowledged that the MNI is

Dates for Trenches 6 and 10			
Depth	Sinclair et al. (2006)	Chami (2009)	Shipton et al. (2016)
0-10	?	16th to 19th cen. CE	?
10-20		Swahili; TIW	Phase 1A: Swahili pottery
20-30			
30-40			Phase 1B:
40-50	limestone flake tools pottery and beads in upper layers	early 1st millennium CE	large limestone flakes crude ETT/TIW pottery
50-60			Olividae shell beads
60-70			late 1st to early 2nd millennium CE
70-80		Early and Late Neolithic	
80-90		early domesticates	Phase 2: LSA, bone tools
90-100		stone tools	rare quartz microliths
100-110			c.13,040 - 11,340 BP
110-120			Phase 3: LSA
120-130	quartz microliths		quartz microliths
130-140	domestic animals		bone tools
140-150	decorated bone		c.18,830 - 17,080 BP
150-160	c.5000 BP		
160-170			
170-180			
180-190		c.6000 BP	Phase 4: sterile
190-200	no occupation		>20,000 BP
200-210			
210-220	Late Pleistocene	c.26000 BP MSA/LSA	
220-230	c.26000 BP	transition	
230-240			
240-250		?	?

Chami (2009): Dates for Trenches 8 and 9			
Context	Depth	Material Dated	Radiocarbon Age, Years BP
Trench 9	20-25 cm	Charcoal	3850 +/-
Trench 9	25-30 cm	Charcoal	1245 +/- 55
Trench 9	25-30 cm	Charcoal	2110 +/- 30
Trench 8	55-60 cm	Charcoal	1525 +/- 40
Trench 8	55-60 cm	Charcoal	1535 +/- 30
Trench 8	65-70 cm	Charcoal	1590 +/- 30
Trench 9	80-85 cm	Landsnail shell	10885 +/- 85
Trench 9	80-86 cm	Charcoal	10645 +/- 45
Trench 9	95-100	Landsnail shell	23590 +/- 90
Trench 9	95-100	Landsnail shell	31195 +/- 665
Trench 8	115-120 cm	Charcoal	5110 +/- 35
Trench 8	160-165 cm	Landsnail shell	16080 +/- 60
Trench 8	185-190 cm	Landsnail shell	15980 +/- 60
Trench 8	185-190 cm	Landsnail shell	16360 +/- 115

TABLE 2 (LEFT) AND TABLE 3 (RIGHT). TABLE 3 ONLY SHOWS THE DATES REPORTED BY CHAMI (2009) FOR TRENCHES 8 AND 9, WHILE TABLE 2 SHOWS VARIOUS CHRONOLOGIES ESTABLISHED FOR TRENCH 6/10. TABLE 2 SOURCED FROM SHIPTON ET AL (2016).

the stratigraphy. Tree roots and, in the case of the SEALINKS excavation, a discernible colluvial channel (Shipton et al. 2016) add to the overall confusion. The result is a stratigraphy that is likely the product of extreme mixing in which one may discern subtle changes in shades of gray and grayish brown. That said, all excavations discovered more discernible layers near the top and bottom of their trenches (Shipton et al. 2016; Chami 2009; Sinclair et al. 2006; Sarathi 2015), mostly of a reddish-brown sediment. However, the SEALINKS excavations and those of Chami and Sinclair achieved greater stratigraphic – and thus chronological – control below the depth of ~130cm, which was the final depth at which marine shell was recovered in my excavations. Therefore, I could not take advantage of the sound chronologies available for layers deeper than ~130cm.

The chronology of the site used here is based on that presented in the SEALINKS report (Shipton et al. 2016), which refined and confirmed that offered by Chami and his colleagues (Chami 2009). The chronology of the site drawn from Shipton et al. (2016) and Chami (2009) is presented in Tables 2 and 3. Table 2 details the chronology of Trenches 6 and 10 excavated by Chami (2009), Sinclair et al. (2006), and the SEALINKS Project (Shipton et al. 2016). Table 3 details the dates recovered for Trenches 8 and 9 by Chami (2009). My trenches, 11 and 12, are located close to Trenches 8 and 9 as well as Trenches 6 and 10. The question to be resolved then is the manner in which the reported dates (Chami 2009; Shipton et al. 2016) can be used to date Trenches 11 and 12, as no samples were submitted for dating from them.

Dating each arbitrarily chosen 10cm stratigraphic layer in Trenches 11 and 12 would not offer a sequential set of dates due to the disturbed deposits that characterize the site. As can be seen from Table 3, samples taken from similar depths in Trenches 8 and 9 are dated to wildly different periods, most likely reflecting colluvial mixing and rodent burrowing. The reconstructed sequences for the region of Trenches 6 and 10 offered by Sinclair et al. (2006), Chami (2009), and Shipton et al. (2016) are compared in Table 2. While some broad correlations exist between the chronologies offered by Chami (2009) and Shipton et al. (2016) in Tables 2 and 3, they disagree in important respects.

For instance, Chami (2009) dates the layers between the depths of 80cm and 180cm to 6kya-2kya, while Shipton et al. (2016) split those layers into two periods, one dating to c.13,040-11,340 BP and the other to c.18,830-17,080 BP. The millennia separating the dates derived for the same small section within the

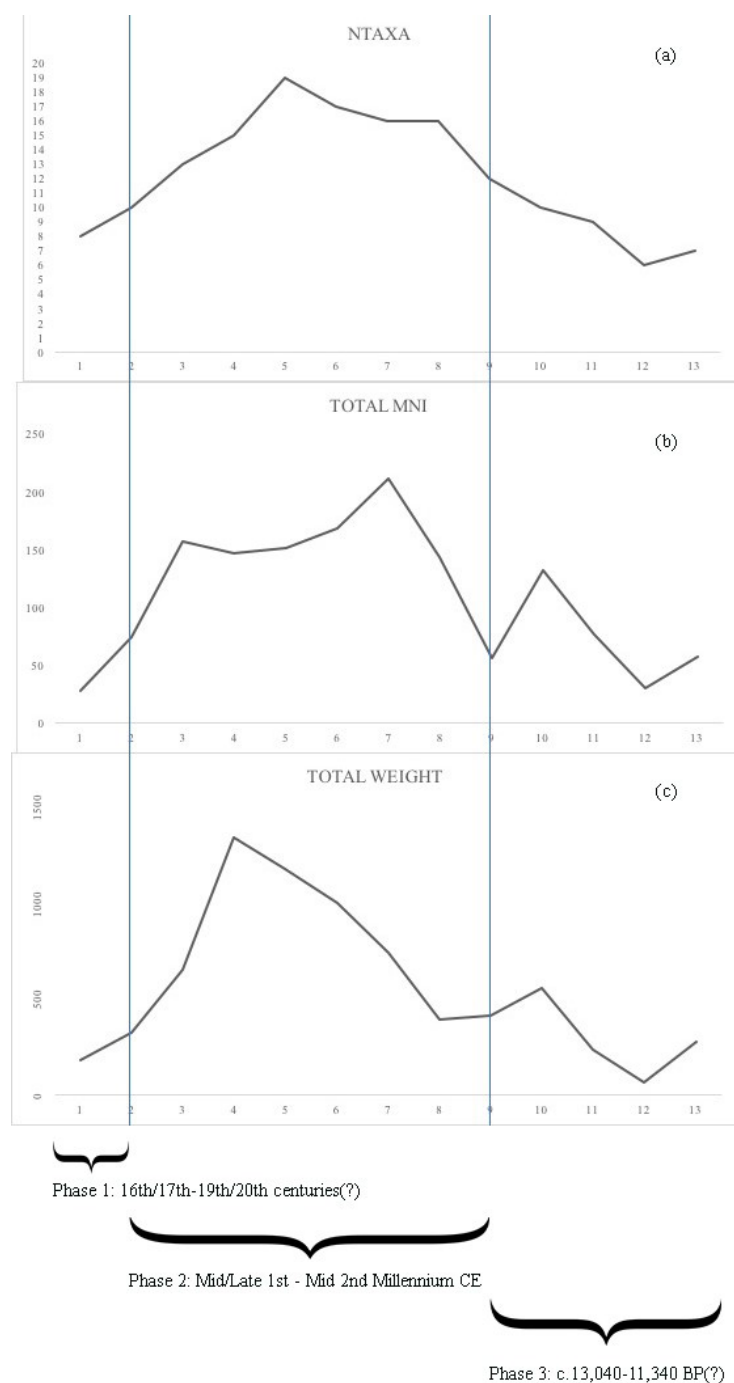


FIGURE 2. SYNCHRONOUS CHANGES IN NTAXA (A), MNI (B), AND TOTAL WEIGHT (C) THAT ALLOW FOR A TRIPARTITE DIVISION OF THE CULTURAL SEQUENCE.

From a qualitative point of the view, this division of the stratigraphy into three periods is justified by the unique species composition of each period. Table 4 is a presence/absence distribution of the genera recovered from Trenches 11 and 12. An 'x' marks a layer in which a genus is present, regardless of its MNI. Each phase has a Number of Unique Taxa (NUT), i.e., taxa not present in any other phase. A single genus (*Melampus*) appears only in Phase 1, for instance. Phases 2 and 3, however, have 16 and 2 genera unique to themselves respectively. The phases vary in their NTAXA (phase 1=11; phase 2=28; phase 3=12), and even more so in taxonomic representation. Thus, each phase represents a unique suite

cave by the two projects is striking and makes corroboration with Chami's (2009) dates for Trenches 8 and 9 difficult. Broadly speaking, however, the sequence offered by Shipton et al. (2016) for the layers between 80cm and 180cm in Trench 10 correspond better with Chami's (2009) dates for Trenches 8 and 9 than Chami's (2009) own dates for Trench 6.

The marine shells recovered from Trenches 11 and 12 revealed patterns of exploitation that divides the occupational sequence of the site into three phases. Figure 2 maps patterns of change in three variables characterizing the marine faunal dataset. Graph (a) maps the change in the diversity/NTAXA of marine fauna at the site over time. Graph (b) maps the change in the MNI of marine shells. Finally, Graph (c) documents changes in the weight of the recovered marine shells over time. Stacking the graphs reveals broad commonalities in their plots. In each, layers 0-2 are characterized by a gradual rise in the variable measured. Layers 2-9, however are characterized by a rapid rise in the variable measured followed by a sharp peak and sudden drop around layers 8-9. Layers 9-13 are characterized by a continuation of the trend of decline or by a small recovery followed by a final decline. A final dip and rise can be noted in layers 12-13, a pattern likely skewed by the partial blockage of layers 10-13 in Trench 11.

Taxonomic Identification	Level												
	1	2	3	4	5	6	7	8	9	10	11	12	13
<i>Cypraea</i>	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Nerita</i>	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Turbo</i>	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Terebralia</i>	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Littorina(?)</i>	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Gibberulus</i>	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Vasum</i>	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Melampus</i>	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Thais</i>	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Conus</i>	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Solena</i>	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Monodonta(?)</i>	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Volema</i>	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Trochus(?)</i>	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Tellina</i>	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Clypeomorus</i>	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Drupa</i>	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Pleuroploca</i>	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Architectonica(?)</i>	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Reishia</i>	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Cerithium(?)</i>	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Tridacna</i>	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Lentigo</i>	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Latirus</i>	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Ovula</i>	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Tectus</i>	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Bursa</i>	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Anadara</i>	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Dendropoma</i>	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Purpura</i>	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Patella</i>	x	x	x	x	x	x	x	x	x	x	x	x	x

Phase 1: NUT=1; NTAXA=11

Phase 2: NUT=16; NTAXA = 28

Phase 3: NUT=2; NTAXA=12

*NUT= Number of Unique Taxa appearing ONLY in a given phase
 *NTAXA: Number of Taxa in a given phase, unique or otherwise

TABLE 4. PRESENCE/ABSENCE DATA FOR SHELLFISH GENERA RETRIEVED FROM TRENCHES 11 AND 12, WITH NUT AND NTAXA COUNTS FOR EACH IDENTIFIED PHASE.

Chami (2006;2009). Based on Chami's (2009) chronology as refined by the SEALINKS Project (Shipton et al. 2016), the earliest evidence of marine shells at the site date to the LSA, dated to c.17kya (Shipton et al. 2016). However, I am more inclined to suggest a terminal Pleistocene/early Holocene (13kya-11kya) date for the earliest marine shells at Kuumbi, preferring this conservative estimate due to the mixing of sediments that has occurred at the site.

Hypothesis Testing

The main question that the periodization described above raises is whether it is merely an artifact of chance rather than an accurate reflection of the site's cultural sequence. The patterns of marine shell taxa that enabled the division of the cultural sequence into three phases could very well be products

of species that was brought to the cave for consumption.

Having identified different phases characterized by different marine shellfish communities in the occupational sequence at Kuumbi, we must now attempt to date these phases as best as we can. Two sets of dates were detailed above in Figure 1. From them, I propose the following ages for the phases (see Figure 2):

Phase 1 (0-20cm): 16th/17th – 19th/20th cen. CE. I accept Chami's (2009) dates partially for this phase because the site was occupied in living memory, thus suggesting that the cave was occupied until the 20th century and not the 19th, as Chami (2009) suggests.

Phase 2 (20-90cm): Early 1st millennium to early/mid 2nd millennium CE. The dates offered by Chami (2009) and Shipton et al. (2016) correspond quite well for these layers.

Phase 3 (90-130cm): 13,040 – 11,340 BP. This was the most difficult layer to date, given the vast difference between the dates offered by Chami (2009) and Shipton et al. (2016) in Table 2. My dates align more with those of Shipton et al. (2016) for this phase because the dates offered by Chami (2009) for similar depths in Trenches 8 and 9 correspond quite well with those offered by Shipton et al. (2016).

The site is critically important for the study of maritime adaptations in East Africa, but not to the extent claimed by

of factors other than the behavior of the people who occupied the cave. For instance, the location of Trenches 11 and 12, the excavation methods employed, and even accidents in collection and recording could lead to misleading patterns. From a taphonomic point of view, the marine shells discarded in the cave could have been removed to another location or so thoroughly destroyed (perhaps by burning or crushing) as to be archaeologically invisible. For instance, even though money cowrie shells (*Monetaria moneta*) have been recorded to have been used extensively on the coast (Kusimba 1999) they were not discovered during my excavations. They may never have been brought to the cave at all; however, they may have been brought to the cave and, given their thin and fragile walls, may have been especially vulnerable to taphonomic agents of destruction.

Therefore, a Kruskal-Wallis (KW) test was conducted for each family of marine shellfish to locate statistically significant differences among the three phases. Each phase was tested against the other two (i.e., Phase 1 v. Phase 2; Phase 1 v. Phase 3; and Phase 2 v. Phase 3). A modified *p*-value of 0.046698 was selected from published exact Kruskal-Wallis probability tables calculated from beta approximations (Meyer & Seaman 2008; Meyer & Seaman 2011), based on the set size for each phase (Phase 2=7 layers; Phase 3=4 layers; Phase 1=2 layers). The KW test was run at the level of the family rather than genera or species were selected to increase sample size for each category, thus militating to an extent against the small sample sizes characterizing many taxa. Since the goal was to assess whether the distribution of a given family was different with statistical significance, the null hypothesis to be tested would be:

H_0 : The distribution of Family X is the same across the three phases.

Comparing the distribution of each family among the three phases using a KW test would assess whether the periodization based on the distribution of individual marine shellfish families across the phases was a product of mere chance or taphonomy rather than human cultural behavior.

Family Name	Mean +/- SD			Total N	adj. P					
	Phase 1	Phase 2	Phase 3		Test Statistic	DF	P	3 v 1	3 v 2	1 v 2
Arcidae	0	0.14+/-0.378	0	13	0.857	2	0.651			
Architectonicidae	0	0.14+/-0.378	0	13	0.857	2	0.651			
Bursidae	0	0.14+/-0.378	0	13	0.857	2	0.651			
Cerithiidae	0	0.57+/-0.535	0	13	4.751	2	0.102			
Conidae	0.5+/-0.707	1.0+/-0.577	0	13	6.665	2	0.036	0.967	0.03	1
Cypraeidae	0	2.71+/-1.496	0	13	5.991	2	0.5			
Vermetidae	0	0.14+/-0.378	0	13	0.857	2	0.651			
Muricidae	0.5+/-0.707	1.71+/-1.496	2.25+/-1.5	13	2.086	2	0.352			
Strombidae	3.0+/-2.828	10.43+/-3.69	1.50+/-2.38	13	9.352	2	0.009	1	0.011	0.227
Fasciariidae	0	0.71+/-0.951	0	13	3.039	2	0.219			
Littorinidae	2.5+/-0.707	2.71+/-1.799	2.5+/-2.082	13	0.013	2	0.994			
Ellobiidae	0.5+/-0.707	0	0	13	5.5	2	0.064			
Trochidae	0	2.29+/-2.215	1.0+/-0.816	13	5.473	2	0.065			
Ranellidae	0	0.57+/-0.535	0	13	4.571	2	0.102			
Neritidae	25.5+/-17.678	71.29+/-28.692	43.75+/-23.128	13	4.8	2	0.091			
Ovulidae	0	0.14+/-0.378	0	13	0.857	2	0.651			
Patellidae	0	0	3.0+/-1.0	13	2.25	2	0.325			
Solenidae	0.5+/-0.707	0.57+/-0.535	0	13	3.364	2	0.186			
Tegulidae	0	0.29+/-0.756	0	13	0.857	2	0.651			
Tellinidae	0	0.57+/-0.787	0	13	3.039	2	0.219			
Potamididae	0	4.0+/-2.582	1.0+/-0.816	13	8.248	2	0.016	1	0.038	0.114
Cardiidae	0	0.43+/-0.535	0	13	3.086	2	0.214			
Turbinidae	13.5+/-9.192	39.29+/-12.216	19.5+/-15.801	13	5.77	2	0.56			
Turbinellidae	3+/-2.828	6.43+/-2.573	1.25+/-1.5	13	7.176	2	0.28	1	0.027	0.566
Melongenidae	0	2.29+/-0.756	0	13	10.206	2	0.006	1	0.014	0.08

TABLE 5. RESULTS OF THE KW TEST RUN FOR 25 SHELLFISH FAMILIES. THOSE THAT EVIDENCED STATISTICALLY SIGNIFICANT DIFFERENCE BETWEEN PHASES ARE HIGHLIGHTED.

Layer	PHASE	Family				
		Conidae	Strombidae	Potamididae	Turbinellidae	Melongenidae
1	1	0	1	1	1	0
2	1	1	5	1	5	0
3	2	1	6	3	6	2
4	2	1	15	5	8	2
5	2	1	11	9	9	3
6	2	1	15	5	7	3
7	2	2	10	2	9	3
8	2	1	10	2	3	1
9	2	0	6	2	3	2
10	3	0	5	2	3	0
11	3	0	1	1	2	0
12	3	0	0	1	0	0
13	3	0	0	0	0	0

TABLE 6. THE MNI FOR THE FIVE FAMILIES THAT CHANGED WITH STATISTICAL SIGNIFICANCE BETWEEN PHASES 3 AND 2

Results

The results of the KW test run using SPSS software are detailed in Table 5. Out of pairwise comparisons with an adjusted p -value of 0.046698 for 25 families, only five – Conidae, Strombidae, Potamididae, Turbinellidae, and Melongenidae – showed any statistically significant difference in distribution across the three phases. That is, only in these five families was the null hypothesis rejected. There were no statistically significant differences in the distribution of the 20 other families among the three phases, and all five families that show statistically significant differences between phases do so between Phases 3 and 2 exclusively.

Discussion

The KW test suggests that the division of the cultural sequence into three phases by ‘eyeballing’ the distribution of taxa and the patterns of change observed in diversity, MNI, and weight has some basis in fact, but only to an extent. Despite the vast temporal gap between Phases 3 (13,040–11,340 BP) and 2 (mid/late 1st – mid 2nd millennium CE), there is extraordinary continuity in the exploitation of specific families of marine shellfish. The MNI for each of the five families that do evidence statistically significant change between the two phases is detailed in Table 6.

One factor that may skew the KW test must be considered is sample size. To increase sample size for the KW test run on each taxon, the identified genera were distributed to their respective families. Yet, there were many families represented by a single individual in the entire cultural sequence. Future research may reveal greater quantities of taxa that would change the conclusions presented here.

The most significant revelation of the KW test is that significant differences exist between Phases 3 and 2 for the five families listed above. Thus, the reoccupation of the site in the mid/late 1st millennium CE was characterized by subsistence patterns that are in some ways distinct from the site’s previous occupation c.11,340 BP. The questions that then arise concern the reasons that prompted the reoccupation of the site in the mid/late 1st millennium CE and the change in the marine taxa exploited. My instinct, at least concerning the reoccupation of the site, is to suggest that the development of

urban trading centers on the island of Zanzibar (Juma 2004; Kleppe 2001) and on the East African coast in general from the mid/late 1st millennium CE led to the development of hinterland sites like Kuumbi. These hinterland sites may have had trade and cultural links with developing urban centers, or may have hosted populations that lived in the cities only periodically. It may be that urban centers such as Unguja Ukuu on Zanzibar continued to exploit the non-marine wild fauna on the island regularly rather than emphasize domestic fauna, then an argument can be made for the spread-out populations of the island being nodes in a shared subsistence system that transcended urban-rural boundaries. Preliminary faunal reports available for Unguja Ukuu and Kizimkazi Dimbani (Juma 2004; Van Neer 2001) suggest that the populations of these centers remained dependent to a significant extent on non-marine wild fauna even while exploiting domestic animals.

Another factor that could have affected changes in the exploitation of these taxa is ecological and environmental change. Species of all five families in the region are associated with shallow water and are found in shallow reefs, often in sediment and under rocks. Most of the other taxa present, however, are also found in similar environments (Richmond 2002). Therefore, no large-scale shift towards or away from the exploitation of shallow waters and reefs is noticeable. Factors other than the development of habitats suitable for these species must be considered. That, however, is dependent on future research.

A final consideration of any anthropogenic assemblage is human emphasis on certain taxa for dietary and non-dietary purposes. Some species of Conidae, for instance, are extremely dangerous to humans when alive for they possess an envenomed sting that can kill humans (Richmond 2002). Yet, they are often collected for the purposes of making jewelry and similar items because of the beauty of their shells.

That said, future research is required to confirm the patterns described here and whether the distinction between the three phases can be sustained in the face of more data. Chami's (2009) excavations and my own do indicate a drop off in shellfish exploitation during the mid 2nd millennium CE. It may be that the sample sizes used in this study were simply not large enough for the KW test to discern any significant distinction between the phases. While seemingly self-evident given continued human occupation of the region, the lack of distinction in the KW test between Phases 1 and 2 also could benefit from some explanation.

Conclusion

This paper examined marine shellfish exploitation at Kuumbi Cave, Zanzibar, taking as its dataset materials excavated in 2014 from Trenches 11 and 12 only. As such, the conclusions presented here are preliminary and are subject to change when more data are considered. Based on 'eyeballed' patterns of taxonomic presence and absence as well as patterns of change in total MNI, weight, and taxonomic diversity, the cultural sequence of Trenches 11 and 12 was divided into three distinct phases: Phase 1 (16th/17th -19th/20th cen. CE); Phase 2 (mid/late 1st millennium – mid 2nd millennium CE); and Phase 3 (c.13,040-11,340 BP). These phases were dated using previously published chronological data (Shipton et al. 2016; Chami 2009). While the site evidences sediment mixing and disturbance, the three phases could be assigned three broadly defined date ranges.

Testing the degree to which the three phases identified here are genuine products of human activities at the site required the taxonomic division of the excavated shellfish into their respective families and Kruskal-Wallis tests run on each family's dataset among the three phases. The KW tests revealed that out of the 25 families tested, only 5 - Conidae, Strombidae, Potamididae, Turbinellidae, and Melongenidae - showed any statistically significant difference in distribution across the three phases,

but exclusively between Phases 2 and 3. Thus, Phases 2 and 3 represented two significantly distinct shellfish exploitation practices, but Phases 2 and 1 did not. This suggests that the conditions that favored the shellfish practices begun in the mid/late 1st millennium CE continued to the 20th century. The development of the Swahili civilization (c.500-1500 CE) (roughly Phase 2) at the site was, at least as far as shellfish exploitation is concerned, not significantly different from what came after it. It was, however, different from shellfish exploitation during the Pleistocene-Holocene transition (Phase 3). Thus, the disruption to the politics and economies of coastal East Africa caused by the arrival of the Portuguese may not have extended to hinterland communities – at least as far as subsistence practices like shellfish gathering are concerned.

A productive avenue of future research would examine subsistence practices at large coastal sites like Kilwa and compare them with those of small hinterland communities such as Kuumbi. A focus on subsistence deemphasizes grand narratives of politics and conquest by examining changes in aspects of daily life, such as subsistence. The results of the KW test presented here must be taken as preliminary; future research based on a larger sample size drawn from many sites is necessary to validate the conclusions present here.

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Artistic Dynamics across the Seas

Architecture, Objects, and Ornamentation in the Medieval Port Cities Kilwa, Songo Mnara and Pisa

Vera-Simone Schulz

Kunsthistorisches Institut in Florenz - Max-Planck-Institut
E-Mail: vera-simone.schulz@khi.fi.it

Symmetrically arranged in rows, eleven x eleven small round wall cavities cover the entire surface of a vaulted ceiling in a stone building on Songo Mnara, a small island, located a few kilometers off the East African coast in today's Southern Tanzania.¹ One row positioned along the central axis at the apex of the room and flanked by five rows leading up to this central axis on each side, respectively, the shallow openings were carved out to insert into them ceramic and porcelain bowls, a number of which can still be seen in situ (fig. 1).

The port city Songo Mnara, in which the said building is situated next to the Sultan's Palace, was founded in the fourteenth century, when the Sultanate of Kilwa with its capital on Kilwa Kisiwani, a more spacious, 45 hectares island in close proximity to Songo Mnara, was at its height.² Extensive mercantile networks linked Kilwa and Songo Mnara with numerous port cities and islands along the East African coast such as Lamu, Mombasa, Tongoni, Zanzibar, the Comoros, and Sofala (fig. 2). They also connected them with the Arabian Peninsula, with Persia, India, China, and further regions of the world as far as the Pacific. The bowls which were inserted into walls and tombstones at Songo Mnara, Kilwa Kisiwani, and other sites along the Swahili coast testify to this cross-cultural connectivity: they were import goods from the Middle East, China, and South-East Asia.³



FIGURE 1. VIEW OF A CEILING WITH INSERTED CERAMIC BOWLS AT SONGO MNARA, TANZANIA

¹ Pradines, S. and Blanchard, P. 2015. Songo Mnara: Étude architecturale d'une ville swahilie médiévale. *Taarifa* 5: 9-33. Wynne-Jones, S. and Fleisher, J. 2015. Conservation, community archaeology, and archaeological mediation at Songo Mnara, Tanzania. *Journal of Field Archaeology* 40.1: 110-119; Fleisher, J. 2014. The complexity of public space at the Swahili town of Songo Mnara, Tanzania. *Journal of Anthropological Archaeology* 35: 1-22.

² Sutton, J. E. G. 1997. Kilwa: A history of the ancient Swahili town with a guide to the monuments of Kilwa Kisiwani and adjacent islands. *Azania* 33: 113-169. Pradines, S. and Blanchard, P. 2005. Kilwa al-Mulûk: Premier bilan des travaux de conservation-restauration et des fouilles archéologiques dans la baie de Kilwa, Tanzanie. *Annales Islamologiques* 39: 25-80.

³ Zhao, B. 2012. Global trade and Swahili cosmopolitan material culture: Chinese-style ceramic shards from Sanje ya Kati and Songo Mnara (Kilwa, Tanzania). *Journal of World History* 23.1: 41-85.



FIGURE 2. MAP OF THE SWAHILI COAST (FROM FLEISHER ET AL., *WHEN DID THE SWAHILI BECOME MARITIME?*)

The aim of this paper is to shed new light on the interrelations between architecture, imported artifacts and architectural ornamentation in late medieval Kilwa and Songo Mnara from an art historical perspective. Though analyzed thoroughly by archaeologists, historians and anthropologists, particularly since James Kirkman's studies of Gedi (1954), Peter Garlake's monograph on the *Early Islamic Architecture on the East African Coast* (1966), Neville Chittick's seminal two-volume on Kilwa (1974), and more recently by Jeffrey B. Fleisher, Mark Horton, Adria LaViolette, Stéphane Pradines and Stephanie Wynne-Jones, the Swahili coast of the premodern period has been and continues to be at the very margin of art historical scholarship.⁴ Yet, now that the field of art history is opening up to a global horizon, the Swahili coast is a case in point regarding the mobility of people and artifacts, cross-cultural dynamics and processes of artistic transfer in the premodern period between the Indian Ocean, the Red Sea, and the Mediterranean, the Persian Gulf, the Bay of Bengal, and beyond.

This paper will focus on three different, though interrelated subject areas regarding the impact of imported artifacts on the art and architecture of late medieval Kilwa and Songo Mnara: (1) the insertion of actual objects into buildings (ceramic and porcelain bowls); (2) the mimetic representation of objects in the medium of stone (reliefs); and (3) architectural ornamentation (star-tile-patterns) in relation to artifacts of the time (tiles and textiles). Its aim is to explore the aesthetics of these vibrant maritime centers of premodern globalization in their transcultural and transmedial entanglements.

To widen the spectrum, the artistic approaches towards imported artifacts in another region and city will briefly serve as a point of comparison. One of the most important maritime powers in the Mediterranean and a vital trading outpost, the art and architecture of medieval Pisa on the Apennine peninsula was equally characterized by imported artifacts, predominantly from the Islamic world, which reached the city as diplomatic gifts, booty, or – most frequently – as items of trade.⁵ Local craftsmen creatively responded to these artifacts, for example, by inserting luster bowls from Fatimid Egypt, so-called *bacini*, into the façades of Pisan churches,⁶ or by evoking imported luxury silks through the use of marble-inlay on pavements.⁷

By comparing the artistic incorporation of imported artifacts into the architecture of the Swahili and Italian coasts, their representation and their evocation in other media and materials, this paper will contribute to the vivid art historical debates about the cross-cultural circulation and migration of artifacts in the late middle ages, artistic dynamics across geographical spaces and media, ornament studies, and artistic interactions in relation to sea travel. It will explore the specifics of the maritime aesthetics characterizing premodern Kilwa, Songo Mnara and Pisa, in which imported artifacts came to shape the cities' visual and material culture.

Built from the Sea: The Settlements along the Swahili Coast and their Multi-Layered Maritime Dimensions

East African stone towns along the rim of the Indian Ocean have long been studied within transoceanic networks, and following the renewed scholarly interest in issues pertaining to the sea, various levels of

⁴ Kirkman, J. 1954. *The Arab City of Gedi*. Oxford, Oxford University Press; Garlake, P. S. 1966. *The Early Islamic Architecture of the East African Coast*. Nairobi/London, Oxford University Press; Chittick, N. 1974. *Kilwa: An Islamic Trading City on the East African Coast*, 2 vols. Nairobi: The British Institute in East Africa; Horton, M. 1996. *Shanga: The Archaeology of a Muslim Trading Community on the East Coast of Africa*. London/Nairobi: The British Institute in East Africa; Pradines, S. 2010. *Gedi, une cité portuaire swahilie. Islam médiéval en Afrique orientale*. Cairo: Institut Français d'Archéologie Orientale. Wynne-Jones, S. 2016. *A Material Culture: Consumption and Materiality on the Coast of Precolonial East Africa*. Oxford, Oxford University Press. Further works by the above mentioned authors are quoted throughout this paper.

⁵ Tangheroni, M. (ed.) 2003. *Pisa e il Mediterraneo: Uomini, merci, idee dagli Etruschi ai Medici*. Milan, Skira; Berti, G., Renzi Rizzo, C. and Tangheroni, M. (ed.) 2004. *Il mare, la terra, il ferro: ricerche su Pisa medievale (secoli VII-XIII)*. Pisa, Pacini.

⁶ Berti, G. and Tongiorgi, L. 1981. *I bacini ceramici medievali delle chiese di Pisa*. Rome: L'Erma di Bretschneider; Mathews, K. R. 2014. Other peoples' dishes: Islamic bacini on eleventh-century churches in Pisa. *Gesta* 53: 5–23.

⁷ Giusti, A. 1994. Il pavimento del Battistero. In Paolucci, A., Chiarlo, C. R. and Falsini, M. (ed.) 1994, *Il Battistero di San Giovanni a Firenze*. Modena, Panini, vol. I: Testi, 373–393.

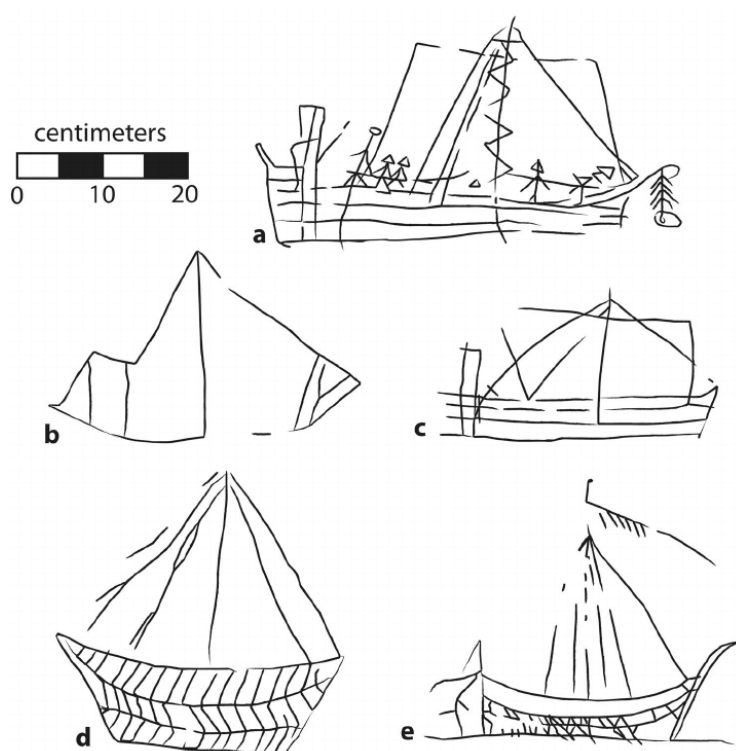


FIGURE 3. SHIP GRAFFITI ALONG THE EAST AFRICAN COAST (FROM FLEISHER ET AL., *WHEN DID THE SWAHILI BECOME MARITIME?*)

walls of houses and mosques such as the ones in the House of the Dhow at Gedi, in the Great Mosque and Husuni Kubwa at Kilwa, or in the Palace and House 17 at Songo Mnara which show a variety of different types of vessels (fig. 3).¹⁰

Islam had been adopted in East Africa early in the middle ages. It is first testified at Shanga in the Lamu archipelago in Northern Kenya in the eighth century, and by the twelfth century, its practice was spread widely along the entire Swahili coast.¹¹ The arrival of Muslims in East Africa from overseas plays a crucial role in local narratives and origin stories. Numerous studies have elucidated the presumed ‘Shirazi’ descent of the inhabitants of the major stone towns, which continues to have an impact on frameworks of identity in this region until the present day.¹² According to one such narrative, Kilwa Kisiwani was founded by Ali ibn al-Hasan, a Persian prince from Shiraz, in the tenth century. The story

‘maritimity’ evident at the sites have been investigated in more detail both empirically and methodologically.⁸ While wattle and daub constituted the main constructing materials in this region throughout the ages, from the eleventh century onwards, coral and lime started to be used for mosques and tombs. Since the thirteenth century, major buildings were literally made from materials related to their oceanic setting. Beach sand provided well-drained foundations, walls were erected from coralline limestone and dressed porites, burned coral served as lime mortar and plaster, coral rubble was employed for the floors and for the fine concrete constituting vaults and ceilings, while cut mangroves supported the roofs.⁹ More than that, artifacts and visual representations referring to sea travel were present in the buildings: from the anchor once near the mosque of Tumbatu, a small island in the Zanzibar archipelago, to the numerous ship graffiti on the

⁸ Fleisher, J., Lane, P. J., LaViolette, A., Horton, M., Pollard, E., Quintana Morales, E., Vernet, Th., Christie, A. and Wynne-Jones, S. 2015. When did the Swahili become maritime? *American Anthropologist* 117.1: 100–115. For the modern period, cf. Meier, S. M. 2016. *Swahili Port Cities: The Architecture of Elsewhere*. Bloomington, Indiana University Press.

⁹ Garlake 1966 (see note 4), 15–29.

¹⁰ Breen, C. and Lane, P. J. 2003. Archaeological approaches to East Africa’s changing seascapes. *World Archaeology* 35.3: 469–489; 477; Garlake, P. and Garlake, M. 1964. Early ship engravings of the East African Coast. *Tanganyika Notes and Records* 63: 197–206; Kirkman, J. 1964. *Men and Monuments on the East African Coast*. London, Lutterworth, 113.

¹¹ Horton, M. 1991. Primitive Islam and architecture in East Africa. *Muqarnas* 8: 103–116; Insoll, T. 2003. *The Archaeology of Islam in Sub-Saharan Africa*. Cambridge, Cambridge University Press; Pouwels, R. L. 1987. *Horn and Crescent: Cultural Change and Traditional Islam on the East African Coast, 800–1900*. Cambridge, Cambridge University Press.

¹² Baker, E. C. 1941. Notes on the Shirazi of East Africa. *Tanganyika Notes and Records* 11: 1–10; Chittick, N. 1965. The Shirazi colonization of East Africa. *Journal of African History* 6: 275–294; Vere Allen, J. d. 1993. *Swahili Origins: Swahili Culture and the Shungwaya Phenomenon*. London, E. A. E. P.; Sutton, J. E. G. The Southern Swahili harbour and town on Kilwa Island, 800–1800 AD: A chronology of booms and slumps. In <http://www.arkeologi.uu.se/afr/projects/BOOK/suttonrevised.PDF> (access: 12.09.2016, 20:12).

is included in the Kilwa Chronicle,¹³ a compendium which was probably composed in or after 1512 and which is preserved in two versions: a Portuguese one, written by João de Barros in 1552, and a nineteenth-century Arabic version.¹⁴ Whether or not Muslim immigrants played a decisive role in the foundation of major cities along the Swahili coast, we do have written, visual, and material evidence for early connections between the Islamic world and East Africa. The Kizimkazi mosque on Unguja, Zanzibar, features an Arabic inscription in floreate Kufic script along the *mihrāb* commemorating the founding of the mosque by Sayyid Abi Imran Mfahamu al-Hasan b. Muhammad in A.H. 500 / 1107 A.D.¹⁵ More than 900 sherds of pottery imported from Iran and Iraq were unearthed in early eighth- through ninth-century structures in the Kenyan town Manda.¹⁶ And, in the mid-tenth century, Abu Ishaq al-Istakhri recounts: 'The most important town [...] after Shiraz, is Siraf, which is almost as large as Shiraz; its houses are of teak wood, or of other wood from [the country of Zanj] [...]'.¹⁷

Natural resources accounted in fact for the majority of the goods traded from medieval East Africa (or Zanj in Arabic and Persian). Besides mangroves for tools, furniture, architecture and roofing, ivory, gold, rock crystal, copper, iron, ambergris, resins, rhinoceros horns, leopard furs, and tortoise shells were shipped from the Swahili coast to ports around the Persian Gulf and beyond.¹⁸ More than that, the revolt of the Zanj in Southern Iraq at the end of the ninth century elucidates the early role of slave trade.¹⁹ Goods imported to East Africa, on the other hand, included glass beads and cotton, bottles and beakers, copper bowls and jewelry, ceramic dishes as well as porcelain and textiles. The significance of the latter finds particular expression in the founding myth of Kilwa. According to the 'Shirazi' legend, Ali ibn al-Hasan – who is locally known as Nguo Myingi ('many clothes') – came into possession of Kilwa Kisiwani by acquiring it from the 'infidel king' of the facing mainland in exchange for a quantity of cloth. 'Some white, some black, and every other colour besides' the textiles which Ali is said to have traded for the territory of Kilwa were presumably sufficient to 'encircle the island'.²⁰

Ibn Battuta's description of his stay at Mogadishu in the spring of 1331 sheds further light on the wide-ranging trade connections of a medieval Swahili port city embodied in imported artifacts as well as on the concurrence of imported and locally produced goods.²¹ As stated by Battuta, Mogadishu was famous for its cloth which was exported as far as Egypt, while Egyptian fabrics reached East Africa in return. Describing the sultan of Mogadishu and his entourage, Battuta specified: 'All the people walked barefoot, and there were raised over his head four canopies of coloured silk and on the top of each canopy was the figure of a bird in gold. His clothes that day were a robe of green Jerusalem cloth and underneath it fine loose robes of Egypt. He was dressed with wraps of silk and turbaned with a large turban'.²² Battuta recounted how he was given clothes as gifts by the sultan which consisted of a silk wrapper, 'an upper

¹³ Doubts were raised several times by scholars regarding this event recorded in the Kilwa Chronicle, see, e.g., Vere Allen, J. d. 1982. The 'Shirazi' problem in East African coastal history. *Paideuma: Mitteilungen zur Kulturkunde* 28 (From Zinj to Zanzibar: Studies in History, Trade and Society on the Eastern Coast of Africa): 9–27: 22.

¹⁴ For the Portuguese version entitled *O Chronica dos Reys de Quilwa* and for the nineteenth-century version, cf. Rollins, J. D. 1983. *A History of Swahili Prose, Part 1: From Earliest Times to the End of the Nineteenth Century*. Leiden, Brill, 16f.

¹⁵ Potter, L. G. 2009. *The Persian Gulf in History*. New York, Palgrave Macmillan, 181.

¹⁶ Chittick, H. N. 1984. *Manda: Excavations at an Island Port on the Kenya Coast*. Nairobi, The British Institute of East Africa; Priestman, S. M. N. 2011. Opaque glazed wares: The definition, dating and distribution of a key Iraqi ceramic export in the Abbasid period. *Iran* 49: 89–113.

¹⁷ The term 'Zanj', used in Arabic and Persian, referred to the population of the Swahili coast and constitutes the root of the modern name of Zanzibar. For this and for the English translation of the quotation, cf. Potter 2009 (see note 15), 174.

¹⁸ Whitehouse, D. 2001. East Africa and the maritime trade of the Indian Ocean, AD 800–1500. In Amoretti, B. S. (ed.), *Islam in East Africa: New Sources*. Rome, Herder, 411–424.

¹⁹ Potter 2009 (see note 15), 174; Pouwels, R. L. 2002. Eastern Africa and the Indian Ocean to 1800: Reviewing relations in historical perspective. *The International Journal of African Historical Studies* 35: 385–425: 395; Pradines, S. 2017. Swahili past in peril: New archaeology in East Africa. *Journal of Oriental and African Studies* 26.

²⁰ Elkiss, T. H. 1973. Kilwa Kisiwani: The rise of an East African city-state. *African Studies Review* 16.1: 119–130: 123.

²¹ For archaeological findings of terracotta spindle whorls and the local textile production in East Africa, cf. Wynne-Jones, S. and Fleisher, J. 2016. The multiple territories of Swahili urban landscapes. *World Archaeology* 1–14: 10f. and fig. 6.

²² Hamdun, S. and King, N. 1998. *Ibn Battuta in Black Africa*. Princeton, Markus-Wiener Publishing, 19.

garment of Egyptian linen with markings, a lined gown of Jerusalem material, and an Egyptian turban with embroideries'.²³ Mercantile interactions with Fatimid Egypt are documented for Manda in the Lamu archipelago in Northern Kenya,²⁴ and apart from the ceramics and porcelain artifacts from the Islamic world and China, numerous coins testify to processes of cross-cultural exchange.²⁵ While Indian Chola coins, a high quantity of Chinese coins, and others from Persia, Umayyad Spain and the Mongol period were recovered along the Swahili coast, fourteenth-century coins minted in Kilwa were found as far as Marchinbar Island off the coast of Australia.²⁶

In the Indian Ocean world, sailors depended on the seasonal winds which reversed with the monsoon (from Arabic *mawsim* (موسم) or Hindi *mausam* for 'season') and which were strong enough to cause also a reversal of currents. Whereas the northeast monsoon allowed the navigation from India and the Persian Gulf to East Africa from November through March, shifting winds in April, now in southwest direction, enabled their return.²⁷ Along the Swahili coast, natural facilities and regulations of sea travel were complemented by socio-economic ones. As several scholars outlined, written accounts such as Ibn Battuta's description of his arrival at Mogadishu give evidence of a system of sponsorship between overseas and local traders:

*When a ship comes into port, it is boarded from sanbuq, that is to say, little boats. Each sanbuq carries a crowd of young men, each carrying a covered dish, containing food. Each one of them presents his dish to a merchant on board, and calls out: 'This man is my guest.' And his fellows do the same. Not one of the merchants disembarks except to go to the house of his host among the young men. [...] [W]hen a merchant has settled in his host's house, the latter sells for him what he has brought and makes his purchases for him. Buying anything from a merchant below its market price or selling him anything except in his host's presence is disapproved by the people of Mogadishu.*²⁸

According to this custom, overseas merchants were obliged to trade exclusively with their local hosts. The high significance and the entanglements of hospitality and trade are also reflected architectonically in the structure of local houses, as several archaeological studies attest.²⁹ Guestrooms, courts, and public spaces have been identified as major components of the buildings to receive foreign merchants and to exchange commodities.³⁰

New archaeological investigations have brought to light other, also smaller towns and housing estates along the Swahili coast, which give us a more nuanced picture of the settlements in this region.³¹ Kilwa

²³ Hamdun and King 1998 (see note 22), 13.

²⁴ Horton, M. 1986. Colonisation of the East African coast: The Manda evidence. *Journal of the Royal Asiatic Society* 2: 201–213.

²⁵ Perkins, J. 2015. The Indian Ocean and Swahili Coast coins, internal networks and local developments. *Afriques: Débats, méthodes et terrains d'histoire* 6 (online access <https://afriques.revues.org/1769#ftn81> 19.09.2016, 19:22).

²⁶ Perkins 2015 (see note 25), 32–35. Cf. also Freeman-Grenville, G. S. P. 1960. East African coin finds and their historical significance. *The Journal of African History* 1: 31–43; Wynne-Jones, S. and Fleisher, J. 2012. Coins in context: Local economy, value and practice on the East African Swahili coast. *Cambridge Archaeological Journal* 22.1: 19–36.

²⁷ Hoyle, B. S. 1967. Early port development in East Africa. *Tijdschrift voor Economische en Sociale Geografie* 58: 94–106; 94; Kirk, W. 1962. The N.E. monsoon and some aspects of African history. *Journal of African History* 3: 263–267.

²⁸ The English translation of the passage by Ibn Battuta is quoted from Freeman-Grenville, G. S. P. 1962. *The East African Coast: Selected Documents from the First to the Earlier Nineteenth Centuries*. London, Clarendon Press, 27f.

²⁹ Fleisher, J. 2010a. Housing the market: Swahili merchants and regional marketing on the East African coast, seventh to sixteenth centuries AD. In Garraty, Ch. P. and Stark, B. L. (ed.), *Archaeological Approaches to Market Exchange in Ancient Societies*. Boulder, University Press of Colorado, 141–159: 152f. Cf. also Allen, J. d. V. 1979. The Swahili house: Cultural and ritual concepts underlying its plan and structure. In Allen, J. d. V. and Wilson, T. H. (ed.), *Swahili Houses and Tombs of the Coast of Kenya*. London, Art and Archaeology Research Papers, 1–32.

³⁰ Allen 1979 (see note 29); Donley-Reid, L. 1982. House power: Swahili space and symbolic markers. In Hodder, I. (ed.), *Symbolic and Structural Archaeology*. Cambridge, Cambridge University Press, 63–73; Fleisher, J. and LaViolette, A. 2007. The changing power of Swahili houses, fourteenth to nineteenth centuries, AD. In Beck, R. (ed.), *The Durable House: House Society Models in Archaeology*. Carbondale, Center for Archaeological Investigations Occasional Paper No. 35, 175–197.

³¹ Fleisher, J. and LaViolette, A. 1999. Elusive wattle-and-daub: Finding the hidden majority in the archaeology of the Swahili. *Azania* 34: 87–108.

Kisiwani ('Kilwa on the island'), on the other hand, ranged among the most powerful cities and trading outposts, predominantly because it was in control of the gold trade.³² The precious metal was transported from the Zimbabwean plateau to Sofala from where it was shipped to Kilwa and beyond. The overlordship over Sofala and its sea route formed the basis for Kilwa's political and economic supremacy which found visual and material expression in the city's urban structure and architecture. When Ibn Battuta visited the Swahili coast, he praised Kilwa as 'one of the most beautiful and well-constructed towns in the world'.³³

Ceramics, Cross-Cultural Connectivity, and Aesthetic Choices

The Great Mosque of Kilwa, the largest premodern stone-built mosque in Sub-Saharan Africa, was one of the buildings already partly erected when Battuta stayed at Kilwa.³⁴ Today, its visual appearance is characterized by fifteenth-century extensions consisting of thirty vaults and small domes which cover five aisles of the width and six bays of the length (fig. 4 and 5). In the fourteenth century, though, it was dominated by one very large dome, the dome of Hasan ibn Sulaiman who was the reigning sultan at the time of Battuta's visit. Now collapsed, it constituted the largest dome along the Swahili coast and it was also praised for its size in the Kilwa Chronicle.³⁵



FIGURE 4. 'GREAT MOSQUE', KILWA KISIWANI, TANZANIA

³² Alpers, E. A. 2014. *The Indian Ocean in World History*. Oxford, Oxford University Press, 51.

³³ Freeman-Grenville 1962 (see note 28), 31.

³⁴ There have been many scholarly discussions on the discrepancy between the stone buildings known to have existed in the early fourteenth century and Battuta's statement that the city of Kilwa was erected of wood, cf. Chittick, N. 1963. Kilwa and the Arab settlement of the East African coast. *The Journal of African History* 4.2: 179–190: 187 and note 23. The recent emphasis on issues of materiality in scholarship may provide new insights in this regard.

³⁵ Garlake 1966 (see note 4), 35f.



FIGURE 5. INTERIOR OF THE 'GREAT MOSQUE', KILWA KISIWANI, TANZANIA



FIGURE 6. 'SMALL MOSQUE', KILWA KISIWANI, TANZANIA

The fifteenth-century Small Mosque is another domed edifice at Kilwa (fig. 6). Three bays long and three aisles wide, the side aisles are covered with hemispherical vaults, while the central aisle, which is slightly wider, features a dome in the center of the building, flanked by two longitudinal barrel vaults to the North and South. Peter Garlake drew already attention to the ‘central climax’ which ‘shows a concern with symmetry and with centralizing and articulating the design’.³⁶ The macro-architectural layout is counterbalanced on the micro-level by the building’s carved and applied decoration. The hemispherical domes in the corner bays are plain, while those in the side aisles on the East and West are fluted. Both types of dome feature ceramic and porcelain bowls inserted into the masonry, which were carefully arranged to accentuate the built structures.

In the plain domes of the Small Mosque, the roundness of the cupola is taken up and enhanced by the placement of one centrally immured bowl encircled by a corona of further round ceramic and porcelain vessels radiating from and forming a ring around the apex (fig. 7 and 8). The fluted domes, in contrast, feature only a single bowl at the top (fig. 9 and 10). Here, the interplay between architecture and applied decoration creates the visual association of the flutes with a canopy of folded cloth fastened by and suspended from a jewel-like bowl. The two barrel vaults in the longitudinal compartments of the mosque are equally embellished with ceramic and porcelain dishes. In the room with the *miḥrāb*, the immured objects decorate both the ceiling and the *qibla* wall pointing North to Mecca. The *miḥrāb* is surmounted by a straight vertical line of three ceramic bowls mortared into the wall (fig. 11).

Ceramic and porcelain bowls, i.e. actual artifacts inserted into built structures, were one of three major modes to negotiate architecture, objects, and ornamentation along the Swahili coast in the premodern period. The two other modes concerned the representation of artifacts and the creation of architectural ornamentation in direct visual and material relation to artifacts.

Elizabeth Lambourn traced the dissemination of carved marble stones from Gujarat in the Indian Ocean littoral and beyond.³⁷ From the thirteenth to fifteenth century, Cambay (modern Khambhat) in Gujarat at the Western coast of India was a major production center for sculpted marble artifacts which were

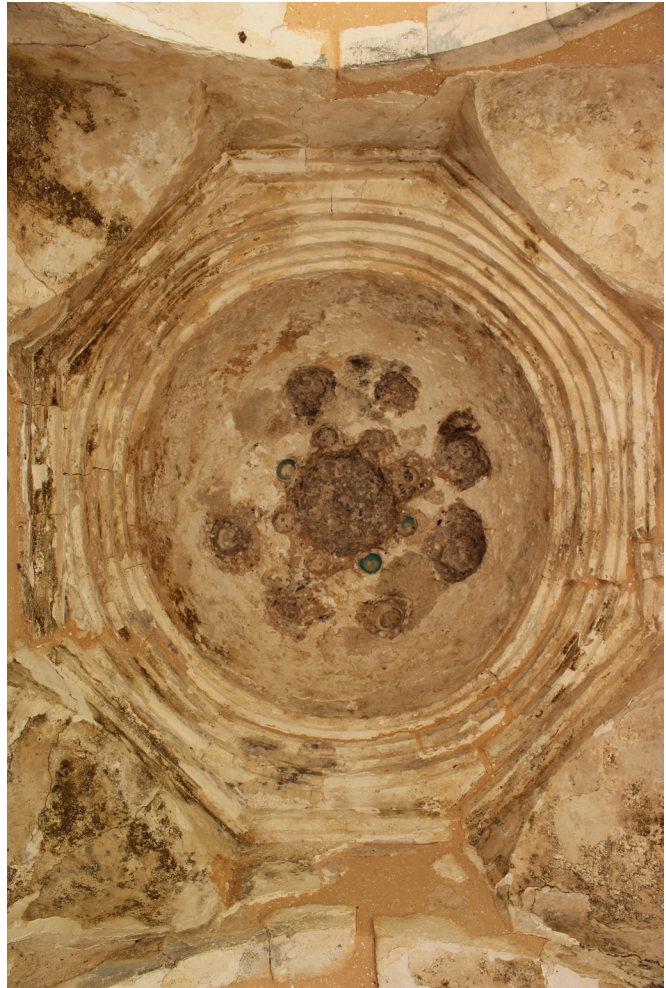


FIGURE 7. DOME OF THE ‘SMALL MOSQUE’ WITH INSERTED CERAMIC BOWLS, KILWA KISIWANI, TANZANIA

³⁶ Garlake 1966 (see note 4), 36.

³⁷ Lambourn, E. 2003. La production de marbre sculpté à Cambaye au Gujarat et son exportation dans l’Océan Indien (XIIIe-XVe s. ap.J.C.). In Santos Alves, J. M. d., Guillot, C. and Ptak, R. (ed.), *Mirabilia Asiatica: Produtos raros no comércio marítimo*. Wiesbaden/Lisbon, Harrasowitz, vol. I, 209–252.

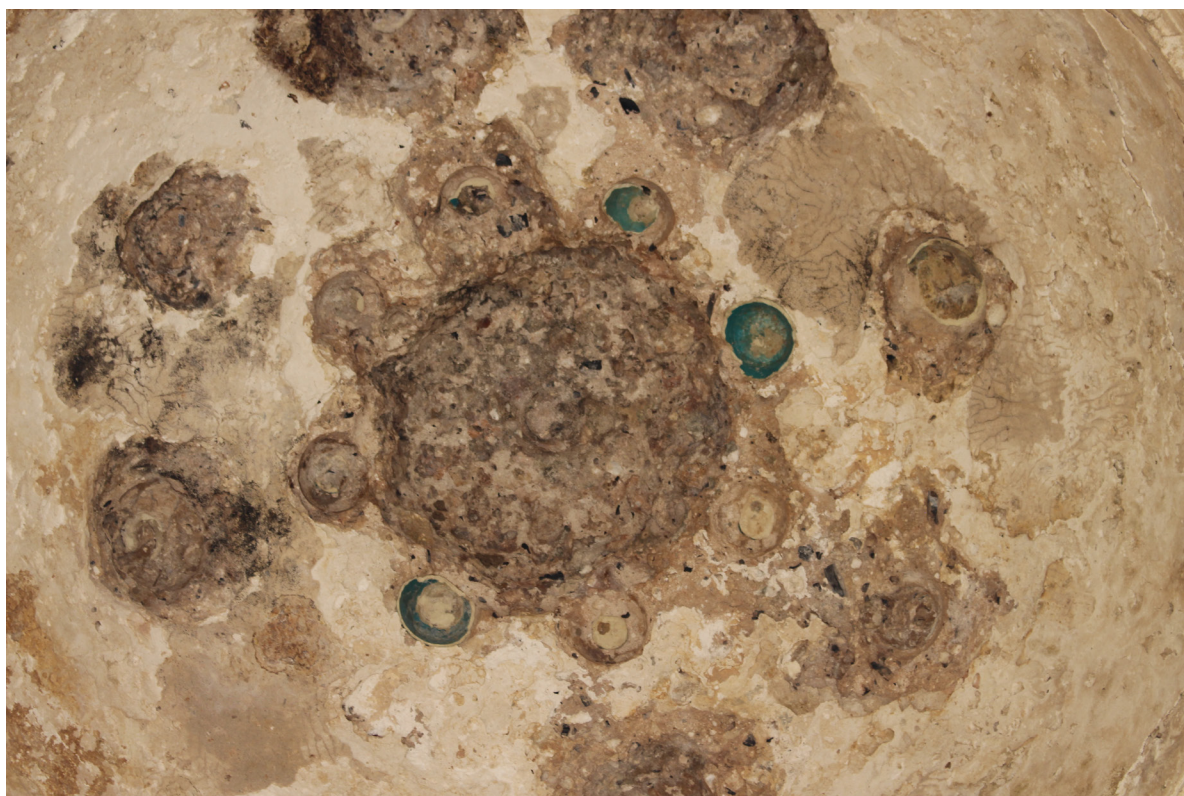


FIGURE 8. DOME OF THE 'SMALL MOSQUE' WITH INSERTED CERAMIC BOWLS, KILWA KISIWANI, TANZANIA



FIGURE 9. DOME OF THE 'SMALL MOSQUE' WITH INSERTED CERAMIC BOWLS, KILWA KISIWANI, TANZANIA



FIGURE 10. DOME OF THE 'SMALL MOSQUE' WITH INSERTED CERAMIC BOWLS, KILWA KISIWANI, TANZANIA

exported to diverse Muslim communities from the East African coast to Java. While a marble *miḥrāb*, a portal and further marble furnishing elements from Gujarat are preserved in the Fakhr al-Din Mosque in Mogadishu,³⁸ Gujarati cenotaphs, equally made from marble, were shipped to other parts of India, to Persia, Oman, Sri Lanka, to the Sultanate of Pasai in Sumatra and to Gresik in Eastern Java.³⁹ In East Africa, one of the tombstones which were found on the so-called cemetery of the Sultans at Kilwa is equally an early fourteenth-century product from Gujarat (fig. 12).

Recent archaeological studies have elucidated that coral stone was by no means the dominant material in thirteenth- to fifteenth-century architectural structures along the Swahili coast. For instance, after the test-pitting of a 37 km-long strip between Dar es Salaam and Bagamoyo in Tanzania, Fleisher and LaViolette came to the result that many of the forty-two sites dating from between the eighth and twentieth century which they had discovered along this strip 'were small and had no evidence of stone architecture'.⁴⁰ Coralline limestone is soft when excavated, but it hardens with age and when exposed to the elements. When dressed, the fine-grained coral can be given 'an almost marble-like finish'.⁴¹ Considering that the use of locally harvested and finished coral stone was already eye-catching in East Africa, actual marble, which was not locally available, such as the creamy white marble from Gujarat 'polished to a smooth, almost translucent finish' must have been a sensational exception.⁴²

³⁸ Lambourn, E. 1999. The decoration of the Fakhr-al-Din Mosque in Mogadishu and other pieces of Gujarati marble carving on the East African coast. *Azania* 34: 61–86. For the Islamic architecture in Mogadishu, cf. Inzerillo, M. 1980. *Le moschee di Mogadiscio: contributo alla conoscenza dell'architettura islamica*. Palermo, Italo-Latino-Americana Press.

³⁹ For a map of the routes of distribution, see Lambourn 2003 (see note 37), 236, plate 1.

⁴⁰ See also their work on Pemba, Fleisher and LaViolette 1999 (see note 31).

⁴¹ Garlake 1966 (see note 4), 15 and 21.

⁴² Lambourn, E. 1999. The decoration of the Fakhr al-Din mosque in Mogadishu and other pieces of Gujarati marble carving on the



FIGURE 11. VIEW OF THE MIHRAB OF THE 'SMALL MOSQUE', KILWA KISIWANI, TANZANIA



FIGURE 12. FRAGMENT OF A GUJARATI MARBLE TOMBSTONE, FOUND AT KILWA KISIWANI, TANZANIA

Yet, the significance of the Gujarati tombstone found in two pieces at Kilwa, one part now being in the Ethnologisches Museum in Berlin (fig. 13),⁴³ goes beyond issues of materiality. In fact, it also features a conspicuous relief. Framed by trees, a repetitive architectural structure with arched niches forms the center of the composition in which giant mosque lamps hang from the ceiling. Above and below, inscriptions in Arabic include verses from the Qu'ran.⁴⁴

The tombstone gave a visual echo of architectural elements in Gujarat (the cusped arches) and one of the presence of objects in such structures (the mosque lamps, rendered in high relief). What is more, with the plantain trees, the relief also introduced Gujarati flora to Kilwa. This calls to mind the mobility of actual flora and fauna in the premodern period as natural resources, raw materials, exotic garden delights, and diplomatic gifts. A mobility which is enhanced and counterbalanced by that of visual motifs: Lambourn drew attention to the fact that one could encounter the composition of trees flanking architectural structures also on medieval West Indian textiles, just as the mango and banana trees visible on other stonework produced in Gujarat is known from resist-dyed cottons manufactured in the same area and equally exported throughout the Middle East and Southeast Asia. As Ruth Barnes and Elizabeth Lambourn have shown, through their export and wide dissemination, Gujarati textiles and marble reliefs featuring vegetal and architectonic motifs connected spaces from the Persian Gulf and the Indian Ocean all the way to Java (fig. 14).⁴⁵

East African coast. *Azania* 34.1: 61–86: 62; Horton, M. 2004. Craftspeople, communities, and commodities: Medieval exchanges between northwestern India and East Africa. *Ars Orientalis* 34: 62–80; Hawkes, J. D. and Wynne-Jones, S. 2015. India in Africa: trade goods and connections of the late first millennium. *Afriques: Débats, methods et terrains d'histoire* 6: 1–31.

⁴³ Garlake 1966 (see note 4), 48.

⁴⁴ Lambourn 2003 (see note 37), 218, note 38.

⁴⁵ Barnes, R. 1997. *Indian Block-Printed Textiles in Egypt. The Newberry Collection in the Ashmolean Museum*. Oxford: Clarendon Press; Barnes, R. 2017. Indian cotton for Cairo: The Royal Ontario Museum's Gujarati textiles and the early Western Indian Ocean trade. *Textile History* 48: 15–30; Lambourn, E. Carving and communities: Marble carving for Muslim patrons at Khambhat and around the Indian Ocean rim, late thirteenth – mid-fifteenth centuries. *Ars Orientalis* 34: 99–131: 109.



FIGURE 13. FRAGMENT OF A GUJARATI MARBLE TOMBSTONE, FOUND AT KILWA KISIWANI, TANZANIA

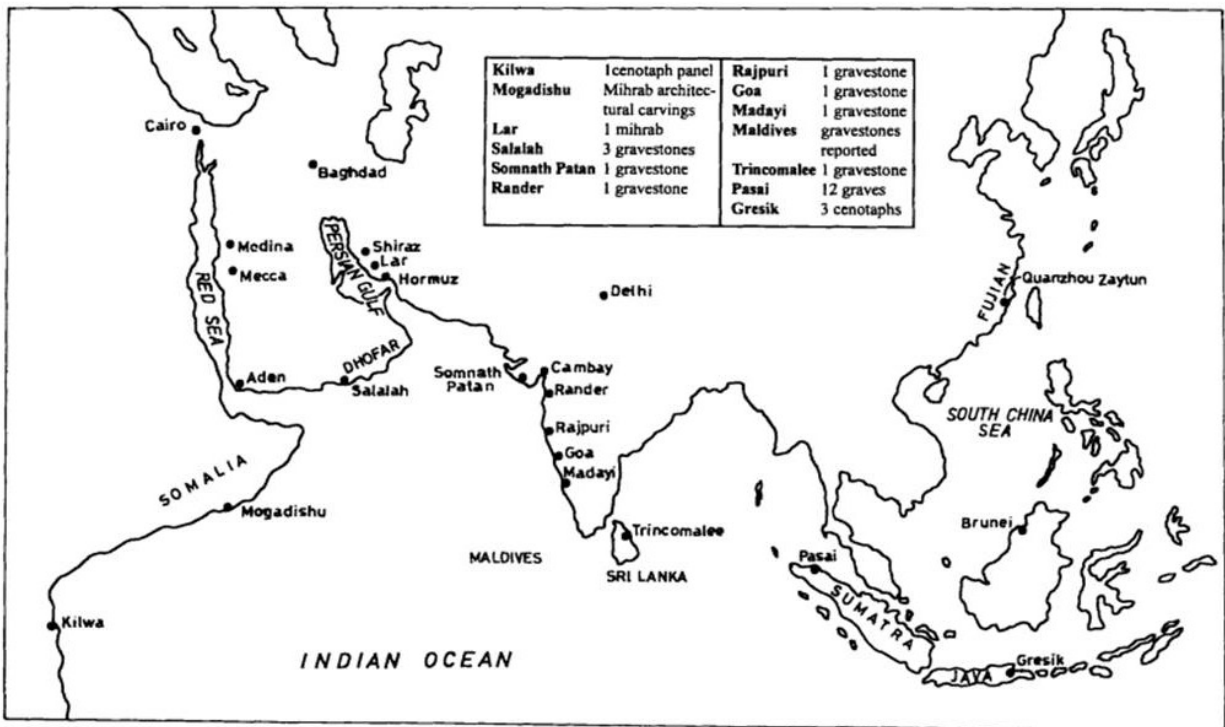


FIGURE 14. TRADE NETWORKS IN THE PREMODERN INDIAN OCEAN WORLD (FROM LAMBOURN, *THE DECORATION OF THE FAKHR AL DIN MOSQUE*)

The third mode negotiating architecture, objects, and ornamentation is evinced in the fragment of a dado of coral panels or ‘tiles’ at the building compound Husuni Kubwa (‘The Great Fort’) on Kilwa (fig. 15). It consists of a grid of raised crosses with pointed arms which form recesses in the shape of eight pointed stars around them. The structure recalls star-tile-patterns of glazed ceramics as they were common in the Middle East particularly in thirteenth- and fourteenth-century Iran. They have been



FIGURE 15. DADO FRAGMENT FROM HUSUNI KUBWA, KILWA KISIWANI, TANZANIA

preserved in museum collections such as the ones from the Ilkhanid palace Takht-e Sulaiman (fig. 16),⁴⁶ but also in situ, where their use for dadoes becomes apparent (fig. 17). In contrast to the numerous ceramic and porcelain bowls which were found along the Swahili coast, glazed ceramic tiles are rare in East Africa. In the late nineteenth century, Richard Burton elaborated on how he found and acquired one specimen at Tongoni near Tana:

In one of these [mausolea], the gem of the place, was fixed a chipped fragment of Persian glazed tile, with large azure letters in the beautiful character called 'Ruka'a,' enameled on a dirty-yellow ground. The legend, شید روشن (Shid i raushan, the 'bright sun'), may be part of a panegyric or devotional verse removed from the frieze of some tomb or mosque. The country people hold it an impregnable proof that the men of Ajem once ruled in Tongoni: but the tile, like two China platters, also mortared into the Shahadah, is evidently an importation from the far north. It was regarded with superstitious reverence by the Wasawahili, who informed me that some years before Kimwere, Sultan of Usumbara, had sent a party of bold men to bear it away: of these, nineteen died mysterious deaths, and the relic was thereupon returned to its place. A few muslins, here representing dollars, had a wonderful effect upon their fancies: I was at once allowed by the principal Diwan to remove it; although no one would bear a hand to aid the Beni Nár, or Sons of Fire, as the Arabs honourably style our countrymen. The tile, a common encaustic affair, found its way to the Royal Geographical Society; nor did the East African expedition feel itself the worse for having sent it.⁴⁷

⁴⁶ Komaroff, L. 2002. The transmission and dissemination of a new visual language. In Komaroff, L. and Carboni, S. (ed.), *The Legacy of Genghis Khan: Courtly Art and Culture in Western Asia, 1256-1353*, exhibition catalogue (New York, Metropolitan Museum of Art; Los Angeles, Los Angeles County Museum of Art), New York/New Haven, Yale University Press, 169-195: 176.

⁴⁷ Burton, R. 1872. *Zanzibar: City, Island and Coast*. London, Tinsley brothers, 2 vols., II, 134f.



FIGURE 16. GLAZED CERAMIC TILES FROM TAKHT-I SULAIMAN, IRAN

Another Persian luster tile carrying the date 667/1269 and placed above the marble niche within the *mihrāb* imported from Gujarat in the Fakhr al-Din Mosque in Mogadishu was first published in 1934.⁴⁸

Considering Burton's condescending comment, which has to be regarded in the context of widespread practices of looting ancient Swahili monuments by Europeans in the nineteenth and early twentieth centuries, it seems possible that more tiles might have existed, but are now lost. Also the tile which Burton claimed to have taken from Tongoni eventually disappeared. The amount of Persian ceramic tiles once imported to the Swahili coast remains unclear. Yet, the shape of the coral dado fragment found at Kilwa is



FIGURE 17. GLAZED CERAMIC TILE REVETMENT AT PIR-I BAKRAN, IRAN

⁴⁸ Reggio Governo della Somalia. 1934. *Museo della Garesa: Catalogo*. Mogadishu, Reggio Governo della Somalia, 69f., no. 14 and the plate on p. 74. See also Cerulli, E. 1957. *Somalia scritti vari editi ed inediti*. Rome, Amministrazione Fiduciaria Italiana della Somalia, vol. I: *Storia della Somalia: L'Islam in Somalia. Il libro degli Zengi*, 9f.; Garlake 1966 (see note 4), 48.



FIGURE 18. SIDEVIEW OF A TOMB, UNGWANA, KENYA

also ambiguous. On the one hand, it evokes a pattern well-known from Persian tile revetments. On the other hand, it has been emphasized that the area of the coral panels framed by the raised crosses is rather irregular and that it would not have been suitable for the insertion of actual ceramic tiles which were standardized in size.⁴⁹ With this irregularity, the dado fragment suggests that it was made to evoke a pattern from Persian tile work, but that it was never intended to be filled. Similar tile-like decorated coral stone has been excavated at Ungwana in Kenya (fig. 18 and 19). The correspondent design of the vaulted side room of the Ungwana Mosque with that of the vaulted rooms of Husuni Kubwa has already been highlighted and the similarities between the dado fragments in Kilwa and Ungwana further support strong artistic links between the two sites.⁵⁰

In all three instances of negotiation between architecture, objects, and ornamentation a double network is hence unfolded: one that reaches across the Swahili coast where, at numerous sites, Middle Eastern,



FIGURE 19. DETAIL OF A TOMB (FIGURE 18), UNGWANA, KENYA

⁴⁹ Garlake 1966 (see note 4), 51.

⁵⁰ Garlake 1966 (see note 4), 51.

Chinese and South-East Asian ceramic and porcelain bowls were inserted into built structures, marble artifacts from Gujarat graced cemeteries and mosques, and dadoes evoking tilework were crafted in coral stone. And one that connects the Swahili coast with other regions in the Indian Ocean, the Persian Gulf and beyond, such as Iran, India, China and South-East Asia.

The medieval coral stone architecture of the East African coast has itself been perceived as being in dialogue with or derived from built structures elsewhere. In this sense, the Friday mosque of Gulbarga in India, dated 1367, was proposed as one of the possible models for the fifteenth-century extensions of the Great Mosque at Kilwa.⁵¹ The artifacts inserted into, represented or evoked in these edifices add to this cross-cultural connectivity, apparent in the buildings as such, further, more tangible, but equally mediated layers. When fixed to the ceiling, ceramic and porcelain containers oscillated between their role as part of the built environment and the numerous itinerant artifacts which were carried, handled, kept, used and cherished right underneath: actual dishes, textiles as garments and furnishing fabrics, and other objects such as the celadon flask from Yuan China with incised floral decoration, dated to around 1300, which was recovered at Husuni Kubwa on Kilwa.⁵²



FIGURE 20. FRAGMENT OF A SILK WEAVING FEATURING A TILE MOTIF, AScribed TO IRAN

Ceramics and porcelain on the one hand and textiles on the other have been most frequently described as artifacts encompassing the globe. The former open up discourses on trade, consumption, and the quest for everyday and luxury products in a cross-cultural perspective.⁵³ The latter, a medium of light weight, easy portability and high value, ranged among the most mobile objects in the premodern world.⁵⁴ In the stone towns along the Swahili coast, these two groups of mobile artifacts came together with and were turned into ‘immobile’ architecture, and all three of them were often entangled. In the case of the dado fragment from Husuni Kubwa and the tomb in Ungwana (fig. 19), for instance, one can ask whether this pattern was inspired by actual ceramic tiles such as the one recovered at Tongoni. Yet, it is notable that this kind of ornamentation was also known from cloth (fig. 20). Persian silk weavings which through their design themselves negotiated architecture, objects, and ornamentation might equally well have reached the Swahili coast and inspired craftsmen to ‘dress’ buildings with coral panels carved to evoke tiles and textiles.⁵⁵

⁵¹ Garlake 1966 (see note 4), 115; Lewcock, R. 1976. Architectural connections between Africa and parts of the Indian Ocean littoral. *AARP* 9: 13–23; Chittick, N. 1980. Indian relations with East Africa before the arrival of the Portuguese. *Journal of the Royal Asiatic Society* 2: 117–127: 119; Pradines, S. 1999. L’influence indienne dans l’architecture Swahili. *AAP* 60: 103–120: 110f.

⁵² Chittick 1963 (see note 34), p. 186 and plate 10.

⁵³ Finlay, R. 2010. *The Pilgrim Art: Cultures of Porcelain in World History*. Berkeley, University of California Press; Carswell, J. 2000. *Blue & White: Chinese Porcelain around the World*, London, Art Media Resources.

⁵⁴ Watt, J. C. Y. and Wardwell, A. E. (ed.). 1997. *When Silk was Gold: Central Asian and Chinese Textiles*. Exhibition catalogue (Cleveland, Cleveland Museum of Art; New York, Metropolitan Museum of Art), New York; Allsen, T. 1997. *Commodity and Exchange in the Mongol Empire: A Cultural History of Islamic Textiles*, New Jersey; Barnes, R. 1997. *Indian Block-Printed Textiles in Egypt: The Newberry Collection in the Ashmolean Museum*, Oxford. Oxford, Clarendon Press, 2 vols.; Serjeant, R. B. 1972. *Islamic Textiles*, Beirut.

⁵⁵ Schulz, V.-S. 2016. Crossroads of cloth: Textile arts and aesthetics in and beyond the medieval Islamic world. *Perspective* 1:

The finewares, inserted into the ceilings, created architectural collages, when the stone was studded with ceramics and porcelain. In the case of the coral dadoes, in contrast, we evince a transfer of pattern from one medium and material to another. With both practices, craftsmen along the Swahili coast sounded out the dynamics of surfaces, issues of transmediality and transmateriality in the articulation of walls and ceilings, and they orchestrated light and shadow from the glittering effects of ceramics to the star-tile-pattern made visible through the penumbra of recesses in coral stone. In a cross-cultural environment linking the Swahili coast with other regions in the Indian Ocean world and beyond, the ones conceptualizing and constructing the stone architecture in East Africa explored the multi-referentiality of materials, objects, and ornamentation in architectonic spaces.

A Comparative Case: Pisa and the Apennine Peninsula

At this point, it is useful to briefly introduce a comparative case: the impact of imported artifacts on the art and architecture of Pisa and the Apennine peninsula. In the middle ages, Pisa was a thriving port city and traded with various Islamic lands. Such practices also caused irritation and objections, as Abbot Donizone's famous protest about the presence of 'Pagans, Turks, Libians, and Parthians' in Pisa reveals: 'Whoever reaches Pisa will see there monsters from the sea. That squalid city has Pagans, Turks, Libians, and even Parthians. Foul Chaldeans traverse her shores'.⁵⁶ Pisa was also engaged in military actions against Islamic adversaries: in 1015/16 in Sardinia, 1034 near Bone in North Africa, 1064 in Sicily, 1087 against Mahdia and Zawila, and 1113/15 in the Balearics, among others. Through diplomatic relations, wars, and trade, numerous artifacts from remote regions reached the city, and contemporaries such as Peter the Venerable, the abbot of Cluny, claimed that 'all the riches of the Orient and Egypt' were accumulated in Pisa.⁵⁷ Among these diverse objects were ceramic bowls, so-called *bacini*, from Fatimid Egypt, Tunisia, Al-Andalus, Sicily and from other regions in the Mediterranean. In Pisa, they circulated secularly as tableware, but their circulation also came to a halt when they were inserted into the stone and brick façades of numerous churches (fig. 21).

Bacini aroused scholarly attention since the nineteenth century. The term, Italian for 'bowls', was coined by Drury Fortnum and Gaetano Ballardini,⁵⁸ and Graziella Berti presented several comprehensive studies on their morphological and decorative features.⁵⁹ In 1985, David Abulafia contributed to the topic with an article from 'a historian's viewpoint'.⁶⁰ For Abulafia, Pisan *bacini* were a valuable source for medieval economic exchange. He argued that the preserved artifacts outweighed the scarce written evidence for ceramic trade in this area and stated that their study could hence provide new insights into the history of the Mediterranean. Though Abulafia's emphasis lay clearly on promoting a turn towards objects in the discipline of history, he was not insensitive to the aesthetic dimensions of the use of *bacini*. On the contrary, he elaborated on the chromatic play of the façades and on their glistening in the sun in the case of luster ceramics, as if the buildings were set with jewelry.

93–108: 101. For the transmedial and transmaterial dimensions of medieval Islamic textiles in relation to architecture, cf. also Golombek, L. 2007. The draped universe of Islam. In Hoffman, E. R. (ed.), *Late Antique and Medieval Art of the Mediterranean World*, Malden, Mass., 97–114.

⁵⁶ 'Qui pergit Pisas, vidit illic monstra marinara. Haec urbs paganis, Turclis, Libicis, quoque Parthis Sordida, Chaldei sua lustrant litora tetri', *Vita Mathildis* 1, 20, v. 1370–1372, quoted from Höh, M. v. d. 2006. *Erinnerungskultur und frühe Kommune: Formen und Funktionen des Umgangs mit der Vergangenheit im hochmittelalterlichen Pisa (1050–1150)*. Berlin, *Hallische Beiträge zur Geschichte des Mittelalters und der Frühen Neuzeit*, 296. For the English translation, see Catlos, B. A. 2014. *Muslims of Medieval Latin Christendom, c. 1050–1614*, Cambridge, Cambridge University Press, 258.

⁵⁷ Quoted from Davidsohn, R. 1977. *Storia di Firenze*. Florence, Sansoni, vol. I, 1176, note 4.

⁵⁸ Fortnum, C. D. 1870. Notes on the 'bacini' or dishes of enamelled earthenware introduced as ornaments to the architecture of some churches in Italy. *Archaeologia* 42: 379–386; Ballardini, G. 1918. The bacini of S. Apollinare Nuovo, Ravenna. *The Burlington Magazine for Connoisseurs* 32: 129–135.

⁵⁹ Berti, G. and Giorgio, M. 2011. Ceramiche con coperture vetrificate usate come 'bacini': Importazioni a Pisa e in altri centri della Toscana tra fine X e XIII secolo. Florence, *All'Insegna del Giglio*; Berli, G. 2002. Ceramiche medievali tunisine a Pisa: 'Testimonianze materiali' di rapporti politici e commerciali tra la fine del X e la metà del XIII secolo. In Salvadorini, V. A. (ed.), *Tunisia e Toscana*. Pisa, Edistudio, 51–82.

⁶⁰ Abulafia, D. 1985. The Pisan 'bacini' and the medieval Mediterranean economy: A historian's viewpoint. *Papers in Italian Archaeology IV: The Cambridge Conference. British Archaeological Reports, International Series* 245: 287–296.



FIGURE 21. CHURCH FAÇADE WITH INSERTED CERAMIC BOWLS, SAN PIERO A GRADO, PISA, ITALY

Analyses of *bacini* have evolved and increased in the last decade, particularly due to a renewed scholarly interest in cross-cultural interactions and processes of artistic transfer in the premodern Mediterranean. Furthermore, studies were fostered by a reinforced emphasis on objects, portability and mobility, the overcoming of the traditional divide between ‘high arts’ and ‘minor’ or ‘applied arts’,⁶¹ issues of ornament and materiality,⁶² as well as transmissions of (technological) knowledge.⁶³ *Bacini* challenge the idea of the ‘rootedness’ of architecture.⁶⁴ The ‘immobility’ of architectural structures has long been questioned in studies of *spolia*, i.e. repurposed and at times also geographically dislocated building materials with their multiple temporalities, for instance, the reuse of elements of antique architecture such as columns or pediments in later buildings.⁶⁵ A stronger focus on *bacini* in recent scholarship has added to these

⁶¹ Cf. e.g. Saurma-Jeltsch, L. E. and Eisenbein, A. (ed.) 2010. *The Power of Things and the Flow of Cultural Transformations: Art and Culture between Europe and Asia*. Berlin: Deutscher Kunstverlag; Schmidt Arcangeli, C. and Wolf, G. (ed.) 2010. *Islamic Artefacts in the Mediterranean World: Trade, Gift Exchange and Artistic Transfer*. Venice, Marsilio; Payne, A. 2009. Materiality, crafting, and scale in Renaissance architecture. *The Oxford art journal* 32.3: 365–386.

⁶² Necipoğlu, G. and Payne, A. 2016. *Histories of Ornament: From Global to Local*. Princeton/Oxford, Oxford University Press.

⁶³ Berti, G. and Gelichi, S. 2001. Trasmissioni di tecnologie nel Medioevo: Tendenze e linee di ricerca attuali. In Centro Ligure per la Storia della Ceramica (ed.), *Circolazione di tecnologie, maestranze e materie prime nelle produzioni ceramiche del mediterraneo dal medioevo all’età moderna*, Albisola, All’Insegna del Giglio, 23–41.

⁶⁴ Redford, S. 2013. Portable palaces: On the circulation of objects and ideas about architecture in medieval Anatolia. In Grossman, H. E. and Walker, A. (ed.), *Mechanisms of Exchange*. Leiden/Boston, Brill, 84–114: 84.

⁶⁵ Greenhalgh, M. 2011. *Spolia*: A definition in ruins. In Brilliant, R. and Kinney, D. (ed.), *Spolia and Appropriation in Art and Architecture from Constantine to Sherrie Levine*. Farnham, Ashgate, 75–95 and Kinney, D. Introduction. In Brilliant and Kinney 2011 (see above), 1–11.

various dimensions and entanglements of proximity and distance: when figurative ceramic bowls from far-away Fatimid Egypt (fig. 22) were acquired, touched, examined, and cherished in local markets in eleventh- and twelfth-century Pisa and then positioned in a 'nearby distance'⁶⁶ high up along the façades or bell-towers of Pisan churches. The comparability of the insertion of imported ceramic bowls into local architectural structures in Kilwa, Songo Mnara and Pisa raises the question whether it is productive to reflect on the situation in medieval Italy for a fresh look on East Africa and vice versa.

In transcultural art history, there are two major approaches to similar phenomena in diverse cultural and geographically distant contexts: connectivity and comparison. While the former seeks to analyze artistic interactions, networks, and dynamics through contact, the mobility of people, artifacts, materials, ideas etc., the latter is concerned with investigating artistic phenomena which share certain formal, conceptual, or decorative elements, but which are not necessarily historically linked with each other or for which we do not have evidence of such links.

A connectivity approach does not imply far-flung connections from the outset, but can and should start in the immediate environs. As already noted, *bacini* were neither the only imported objects in Pisa, nor were they the only imported objects incorporated into Pisan architecture. It is hence elucidating to consider

⁶⁶ For a new approach sounding out different layers of proximity and distance, cf. the Wölfflin lecture series at the University of Zurich (2015/16) held by Gerhard Wolf.



FIGURE 22. CERAMIC BOWL FROM FATIMID EGYPT, ONCE INSERTED INTO A PISAN CHURCH FAÇADE



FIGURE 23. BRONZE GRIFFIN, ASCRIBED TO IRAN OR MALLORCA, ONCE ON TOP OF PISA CATHEDRAL, ITALY

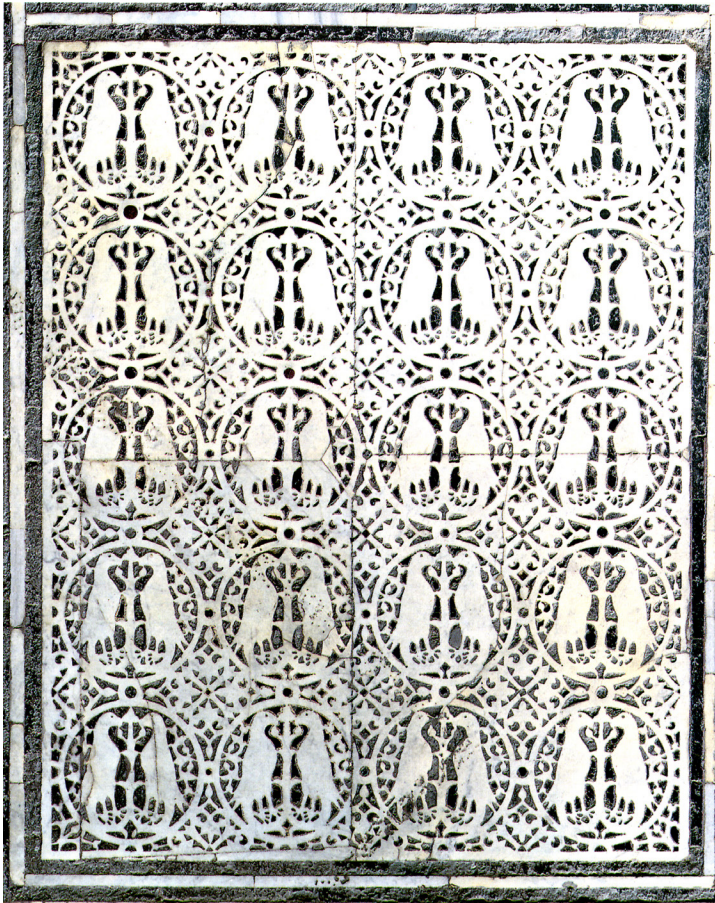


FIGURE 24. FLOOR PAVEMENT IN THE BAPTISTERY OF FLORENCE, ITALY

roundels, each of them comprising two birds facing one another across a stylized tree (fig. 24). Through its ornamentation, the pavement recalls a precious textile, the filigree work of delicate lace and the repetitive pattern of silk weavings, while the marble pulpit in San Gennaro near Lucca seems to be ‘vested’ with white roundels filled with griffins, dragons, and lions on a dark ground, as if sumptuous silks had been draped over the stone (fig. 25).⁶⁸

While this awareness of the ways in which diverse imported artifacts had an impact on the art and architecture in Pisa and nearby cities provides us with a more nuanced picture of the specifics of the use of *bacini*, the latter is further widened by looking beyond Tuscany. *Bacini*, although abundant in Pisan architecture, were by no means confined to this city and region. On the Apennine peninsula, we can in fact encounter numerous cases of imported ceramics inserted into buildings. For instance, in Ravello in Southern Italy, the early thirteenth-century pulpit in the church of S. Giovanni Battista del Toro, founded

them in an urban context which was shaped by artifacts that had reached the city from afar and which were openly presented both to Pisan citizens and to foreign visitors. This local contextualization of imported objects enables us to make out juxtapositions, such as the one between a ‘unique’ imported artifact, the immense bronze griffin, commonly thought to have been made in Al-Andalus, Mallorca or Iran,⁶⁷ which was placed on top of Pisa cathedral (fig. 23), in comparison and contrast to ‘serial’ imported objects, the countless *bacini* on the façades of Pisan churches. Furthermore, from a media-transgressive perspective, such a contextualization allows us to look beyond the objects themselves and to study also their evocations in visual and material culture. Though we know, for example, of the presence of imported luxury fabrics in Tuscan churches, textiles were also frequently evoked in other media and materials such as stucco and stone. The pavement of the baptistery in Florence, for example, contains a conspicuous area: a structure of interconnected

⁶⁷ Contadini, A., Camber, R. and Northover, P. 2002. Beasts that roared: The Pisa griffin and the New York lion. In Ball, W. and Harrow, L. (ed.), *Cairo to Kabul: Afghan and Islamic Studies Presented to Ralph Pinder-Wilson*, London, Melisende, 65–83.

⁶⁸ Giusti 1994 (see note 7), 382. For the evocation of textiles in other media in the middle ages, see also Leclercq-Marx, J. 2007. L’imitation des tissus ‘orientaux’ dans l’art du Haut Moyen Âge et de l’époque romane: Témoignages et problématiques. In Quintavalle, A. C. (ed.), *Medioevo mediterraneo: L’Occidente, Bisanzio e l’Islam* (atti del convegno internazionale di studi, Parma, 21–25 settembre 2004), Milan, Electa, 456–469. For interrelations between furnishing fabrics and built architecture, see Semff, M. 1987. Textiler Festschmuck in Stein? Überlegungen zu den Orvietaner Fassadenreliefs. *Münchener Jahrbuch der Bildenden Kunst* 38: 83–106; Tripps, J. 2010. Von der Kathedrale zu Reims bis zum Baptisterium von Florenz. *Funde zum Behängen mittelalterlicher Kirchenfassaden mit Textilien*. In Nussbaum, N. (ed.), *Die gebrauchte Kirche. Symposium und Vortragsreihe anlässlich des Jubiläums der Hochaltarweihe der Stadtkirche Unserer Lieben Frau in Friedberg (Hessen) 1306–2006*, 83–89.



FIGURE 25. AMBO IN SAN GENNARO NEAR LUCCA, ITALY



FIGURE 26. PULPIT IN S. GIOVANNI BATTISTA DEL TORO, RAVELLO, ITALY



FIGURE 27. DETAIL OF THE PULPIT IN S. GIOVANNI BATTISTA DEL TORO, RAVELLO, ITALY



FIGURE 28. CERAMIC BOWL, INSERTED INTO THE PULPIT IN S. GIOVANNI BATTISTA DEL TORO, RAVELLO, ITALY

in 975 and consecrated in 1069, features imported ceramics from the Middle East and Eastern Mediterranean both as entire bowls and as small fragments which were used together with mosaic tesserae, *pietre dure*, marble and glass (fig. 26 and 27).⁶⁹ Particularly the turquoise bowls, placed in the center of the compositions, were not only used as color accents, but through their roundness, framed by the polychrome and poly-material bands, they also generated a dynamic, as if rotating in the stone (fig. 28).⁷⁰

The presence of both intact and fragmentary imported ceramics in Ravello sheds light on a central aspect regarding the mobility of artifacts. In contrast to

unbreakable textiles, ceramics and porcelain were continuously exposed to the risk of shattering into pieces. This datum draws attention to practices such as the wrapping, packing and unpacking of fragile

⁶⁹ Schvoerer, M. 1992. Bacini et tesselles en céramique glaçurée de l'église San Giovanni del Toro, Ravello. *Apollo* 8: 74–96.
Caskey, J. 2004. *Art and patronage in the medieval Mediterranean: Merchant culture in the region of Amalfi*, New York: Cambridge University Press, 121–128.

⁷⁰ Ballardini, G. 1933. 'Bacini' orientali a Ravello. *Bollettino d'arte* 27: 391–400: 392.

goods in long-distance transport, yet, it also points to creative artistic approaches towards ceramic shards. For example, in the lunette above the main doorways of the west side of the Cathedral of Genoa, Christ in Judgement appears between the symbols of the Evangelists and the Martyrdom of St Laurence, the patron saint of the cathedral. At the right margin, an angel bears the crown of martyrdom (fig. 29). The latter is a composite object consisting of enamel tesserae, ten fragments of Byzantine glass, and ceramic shards, among them right in the center of the crown a piece of *minai* or *haft rang* ware from Seljuk Persia (fig. 30).⁷¹ Dated to the twelfth or early thirteenth century, this Persian ceramic fragment executed in the *minai* technique and featuring the head of a woman must have arrived within a strikingly short time in Italy to be incorporated into the lunette, carved around 1225. Here, the ceramic shards were not only inserted into decorative bands such as in Ravello. Rather, they were used to represent an object forming part of the figurative composition, but unlike themselves: not a ceramic dish, but a crown.

These cases exemplify the vast array of possibilities in which artists worked with imported artifacts in medieval Italy as actual objects, intact or fragmentary, as evocations in other media, and as representations of other objects. It has often been noted that these artistic practices cannot be generalized, but that they need to be examined in all their specifics from case to case. For example, regarding intact *bacini*, even small distances come along with new and different layers of meaning. As Michelle Hobart pointed out, the use of *bacini* in Pisa and on the nearby island Sardinia differed considerably. Whereas in Pisa, *bacini* were objects imported from the Islamic world, which then became part of



FIGURE 29. DETAIL VIEW OF THE TYMPANON OF GENOA CATHEDRAL, ITALY



FIGURE 30. REPRESENTATION OF A CROWN INCLUDING A PERSIAN CERAMIC FRAGMENT IN THE TYMPANON OF GENOA CATHEDRAL, ITALY

⁷¹ See the contribution by Fabio, C. d. in: Gardini, A. 2000. Le tessere musive in ceramico del portale maggiore. In Bozzo, G. (ed.), *Cattedrale e Chiostro di San Lorenzo a Genova: Conoscenza e restauro*, Genoa, Sagep, 26f. and 46.

the city's visual and material culture, in Sardinia, which had been under Islamic rule for a considerable number of years, *bacini* were only introduced when the island came under the dominion of the Pisan republic. According to Hobart, '*bacini* could thus be considered ornaments by which Pisan merchants could assert their role in the community and claim ownership in a complex and competitive socio-political environment.'⁷² In Pisa, ceramic bowls imported from Islamic lands were appropriated to such an extent that the practice of inserting them into architectural structures was exported to Sardinia: as a Pisan practice and as a means to underscore Pisa's privileged status in a transregional and cross-cultural perspective. As Hobart noted, 'this might not have been evident to Sardinians who had never been to Pisa, but it would have been obvious to those who traveled and exchanged goods in the Mediterranean'.⁷³

Across Geographical Spaces, Media, and Disciplines

Bacini are commonly studied in a Mediterranean context and they have even been called a 'pan-Mediterranean phenomenon'. The acts of the 26th international ceramics congress at Albisola in 1993 are a remarkable exception oscillating between a wider and a narrower focus on *bacini* in medieval architecture. On the one hand, a fifteenth-century *mihrāb* with cavities for ceramic and porcelain bowls in Gedi, Kenya, is the very first image in the introduction, followed by examples from Egypt, Turkey, Greece, and Crete.⁷⁴ Sauro Gelichi, Graziella Berti and Sergio Nepoti drew explicit attention to the fact that the use of *bacini* was a widespread phenomenon, also beyond the Mediterranean, and a short study on *bacini* in medieval Yemen was included in the volume. On the other hand, exactly because of the broad diffusion of these practices, the editors expressed opposition to enlarging their horizons too much (*allargare troppo i nostri orizzonti*).⁷⁵

This article, in contrast, argues for a wider horizon to instigate a new dialogue on ceramic bowls in built environments. One that gives room for case studies, site-specific close readings, but also for micro-, meso-, and macro-approaches to practices of inserting ceramic and porcelain vessels into architectural structures, both on a methodological and an empirico-historical level.

In Italian and Mediterranean art history, Pisan *bacini* are discussed as architectural decoration. Excavations in Pisa indicate that the very same objects were also used as kitchenware.⁷⁶ Yet, once incorporated into church walls, they are understood to be devoid of their previous function as dishes.

An entirely different picture emerges when we consider recent anthropological studies on the incorporation of ceramic and porcelain bowls into the architecture of the premodern Swahili coast. Here, Jeffrey Fleisher argued that the bowls did preserve some of the function they were originally made for. He drew attention to the crucial role of ritual feasts in social life along the Swahili coast from the eleventh and particularly during the fifteenth century.⁷⁷ Linda W. Donley-Reid criticized the understanding that imported ceramics and porcelain were commonly used as tableware in premodern East Africa. According to her, this function was rather held by wooden plates and trays.⁷⁸ In public feasts, however, the imported bowls might have indeed figured prominently, as Fleisher suggested. Large Chinese

⁷² Hobart, M. 2010. Merchants, monks, and medieval Sardinian architecture. In Schryver, J. G. (ed.), *Studies in the Archaeology of the Medieval Mediterranean*. Leiden, Brill, 93–114: 108.

⁷³ Hobart 2010 (see note 72), 108.

⁷⁴ Gelichi, S., Berti, G. and Nepoti, S. 1996. Relazione introduttiva sui '*bacini*'. In Centro Ligure per la Storia della Ceramica (ed.), *Atti XXVI convegno internazionale della ceramica: 'I bacini murati medievali. Problemi e stato della ricerca'*, Albisola, 28–30 maggio, 1993. Albisola, Centro Ligure per la Storia della Ceramica, 7–30: 23, fig. 1.

⁷⁵ Gelichi, Berti and Nepoti 1996 (see note 74), 11.

⁷⁶ Berti, G. and Tongiorgi, L. 1981. *I bacini ceramici del Duomo di S. Miniato (ultimo quarto del XII secolo)*. Genoa, Sagep, 14–18.

⁷⁷ Fleisher, J. 2010b. Rituals of consumption and the politics of feasting on the East African coast, AD 700–1500. *Journal of World Prehistory* 23: 195–217.

⁷⁸ Donley-Reid, L. W. 1990. The power of Swahili porcelain, beads and pottery. In Nelson, S. M. and Kehoe, A. B. (ed.), *Powers of Observation: Alternative Views in Archaeology*. Washington, D.C., American Anthropological Association, 47–59.

porcelain dishes with a flattened base, for instance, were apt to be placed on the ground, their sumptuous design ‘on the inner side of a vessel being only gradually revealed in the process of shared consumption’.⁷⁹

Ritual feasts can be described as examples of gastro-politics when the local power holders established and reinforced paternal ties with ordinary citizens and negotiated with people from diverse denominations and religions. As Bing Zhao put it, ‘the choice, taste, preparation, and presentation’ of shared meals all formed ‘part of the social processes involved in such feasts, leading to an emphasis on the visibility of ritual material culture.’⁸⁰ Fleisher argued that the strong visual emphasis on imported bowls through their incorporation into public monuments such as mosques and tombs referred to these feast practices, that it demonstrated ‘a local leader’s ability to ‘feed’ the community’.⁸¹ According to him, they were public statements, ‘suggestive of meals both eaten and yet to be consumed’.⁸² Fleisher’s hypothesis can be further strengthened by recalling the significance of hospitality and the nourishing of guests, when the local population and sponsors handed over dishes with food to merchants arriving from overseas, as described by Ibn Battuta.



FIGURE 31. AMBO OF HENRY II WITH FATIMID ROCK CRYSTAL CUP, AACHEN CATHEDRAL, GERMANY

Fleisher’s explanation is site-specific, yet, it can also be a stimulus to rethink the use of *bacini* in premodern Italy, in other sites across the Mediterranean and beyond. A famous case of the use of Islamic dishes in a medieval Christian setting is the ambo (raised pulpit) of Henry II (1002-1014) in Aachen Cathedral in Germany (fig. 31). Here, – among various kinds of spolia and precious stones – a rock crystal cup with a saucer from Fatimid Egypt were inserted.⁸³ On the ambo, the two objects were isolated from each other, they were presented separately on the right and left side of the platform (fig. 32). Through this isolation, both artifacts could be invested with new layers of meaning and, given their shape, viewers might well have associated cup and saucer with the two most significant objects during the Christian mass: chalice and paten.⁸⁴

⁷⁹ Fleisher 2010b (see note 77).

⁸⁰ Zhao 2012 (see note 3), 64.

⁸¹ Fleisher 2010a (see note 29), 156.

⁸² Fleisher 2010b (see note 77), 211.

⁸³ Matthews, K. R. 1999. Expressing political legitimacy and cultural identity through the use of spolia on the ambo of Henry II. *Medieval Encounters* 5: 156–183.

⁸⁴ For the role of chalice and paten in liturgy in the late middle ages, cf. Subes, M-P. 2004. Art et liturgie. Le flabellum et l’ostension de la patène dans le ceremonial de la messe. *Bibliothèque de l’École des Chartes* 162: 97–118. See also Braun, J. 1932. *Das christliche Altargerät*. Munich, Hueber.



FIGURE 32. AMBO OF HENRY II WITH FATIMID ROCK CRYSTAL SAUCER, AACHEN CATHEDRAL, GERMANY

The taking into account of scholarly approaches to practices of inserting ceramic and porcelain bowls into premodern Swahili architecture can thus trigger the question whether *bacini* in the Mediterranean and beyond might have also retained some of their original function. In medieval Pisa, for example, it is notable that the use of *bacini* was almost exclusively restricted to church architecture. One may hence wonder, whether their presence did not also recall the fact that at every mass, the miracle of transubstantiation, the conversion of bread and wine into the body and blood of Christ, took place in and on dishes: as if devotees and visitors were welcomed by artifacts referring to this event already when approaching the church; as if these objects and this event were tilted outwards, merged with the building.

Likewise, it can be fruitful to consider the vast array of studies on *bacini* in Pisa, the Apennine peninsula, and the Mediterranean to gain new insights into the practice of inserting ceramic and porcelain bowls into edifices in other regions such as East Africa. Abulafia's article, for example, is still a key-reference in this regard, and his

elaboration on the gemlike appearance of *bacini* in Pisan architecture could be inspiring to reconsider the significance of architectural jewelry along the Swahili coast. The conscious placement of glazed ceramics and porcelain bowls on walls and ceilings, for instance in the midst of a canopy-like cupola as if referring to a shimmering brooch, or covering the vaults like monumental beads on a string could be a productive avenue of inquiry.

Further comparative approaches may interrogate the discrepancy between Pisa, where from the thirteenth century onwards, local craftsmen imitated the imported ceramics,⁸⁵ where imported *bacini*, when broken or fallen down, were then replaced by locally produced ones in contrast to the Swahili coast, where immured Persian turquoise ware and Chinese porcelain vessels were never substituted with copies of local potters. The temporalities of these practices also merit further investigation, for instance, the reduced timeframe of the use of *bacini* in Pisa from the last quarter of the tenth to the beginnings of the fifteenth century (while 'antiquarian' *bacini* and later replicas in Sardinia such as the seventeenth-century plate from Montelupo Fiorentino which was inserted at an even later date into the campanile of San Pietro at Quartu Sant'Elena, or the eighteenth- and nineteenth-century pottery

⁸⁵ Berti, G. in Tangheroni 2003 (see note 5), 169–179: 169.

randomly arranged on the façade of the Sanctuary of Bonacattu are exceptions)⁸⁶ and the replacement of the bowls by modern copies whereas the originals were transferred to museums in contrast to the remarkable *longue durée* of the practice along the Swahili coast, where imported porcelain bowls continued to hold a prominent position in visual and material culture and were displayed in tombs such as at Kunduchi and in eighteenth- and nineteenth-century Swahili merchant mansions;⁸⁷ or Europeans looting and vandalizing ancient Swahili monuments on their search for ‘old china’ in the nineteenth and early twentieth century.⁸⁸

Yet, a joint approach considering both the Swahili coast and the Apennine peninsula can also be productive beyond comparability. Throughout the premodern period, the Indian Ocean and the Mediterranean were interconnected spaces. We know of traveling objects such as ceramics of the late fifth century CE from the Eastern Mediterranean, which were unearthed in Zanzibar,⁸⁹ as well as of merchants, diplomats, adventurers and pilgrims who traversed both seas, such as Ibn Battuta who voyaged across the Mediterranean on a pilgrimage to Mecca and later along the Swahili coast before returning to his hometown Tangier, Algeria.

Considering the Indian Ocean world, East Africa and the Mediterranean in terms of connectivity raises the question how to grasp the insertion of ceramic and porcelain bowls into the built environment, widespread in all these regions: as yet another ‘origin story’, a quest for the ‘origins’ of this practice; as practices independent from one other; or as specimens of what Oleg Grabar conceptualized as a ‘shared culture of objects’.⁹⁰ Grabar developed this notion with regard to courtly contexts, a restriction which has already been questioned in the literature, for instance, by Vera Beyer and Isabelle Dolezalek who argued also for a shared mercantile culture of objects in the medieval Mediterranean and based their argument on the use of *bacini* in Pisa, a commercial nodal point with ties to all the diverse regions the ceramics were imported from.⁹¹ Yet, one could also question the limited focus on the Mediterranean in Grabar’s concept and investigate to what extent one could also speak of the practices and visual culture of ceramics and porcelain bowls inserted into architectural structures in the Mediterranean and the Indian Ocean world as shared ones.

In the case of the Apennine peninsula and the Swahili coast, it is notable to draw attention to all the sites positioned in between where ceramic and porcelain vessels were also incorporated into built structures. In the Caucasus, the city of Ani where ceramic bowls were immured into the city wall has been studied looking West to the use of *bacini* in Greece, the Apennine peninsula and beyond, as well as East to the tradition of ceramic and tile revetments in Middle Eastern and particularly Persian architecture.⁹² Another pivotal area which would be particularly fruitful to study further as a threshold of the Mediterranean, East Africa, the Middle East and Asia, not least with regard to ceramic bowls inserted into buildings, is Yemen where this practice is known from numerous sites such as the Sa’da mosque at al-Tut, the Sa’da mosque at al-Dawid, the Great Mosque of Saqayn, the mosques of Ali, Al-Abhar, and Salah al-Din in Sanaa, or those of al-Yabis, al-Nizari, al-Zaidan, and the Qubbat al-Sharifa and the Qubbat al-Mukhtan in Sa’da.⁹³

⁸⁶ Hobart 2010 (see note 72), 104.

⁸⁷ Meier, S. P. 2009. Objects on the edge: Swahili coast logics of display. *African Arts* 42.4: 8 – 23.

⁸⁸ Meier, S. P. 2015. Chinese porcelain and Muslim port cities: Mercantile materiality in coastal East Africa. *Art History* 38.4: 702–717: 709f.

⁸⁹ Juma, A. M. 1996. The Swahili and the Mediterranean worlds: Pottery of the Late Roman period from Zanzibar. *Antiquity* 70: 148–154.

⁹⁰ Grabar, O. 1997. The shared culture of objects. In Maguire, H. (ed.), *Byzantine Court Culture from 829 to 1204*, Washington D.C., Dumbarton Oaks Research Library and Collection: 115–129.

⁹¹ Beyer, V. and Dolezalek, I. 2010. Contextualising choices: Islamicate elements in European arts. *The Medieval History Journal* 15.2: 231–242.

⁹² Demiriz, Y. 1972–73. Mimari Süsleme Renk Unsuru Olarak Kullanılan Keramik Çanaklar. *Sanat Tarihi Yıllığı* 5: 175–208; Redford, S. 2015. Ceramics and society in medieval Anatolia. In Vroom, J. (ed.), *Medieval and Post-Medieval Ceramics in the Eastern Mediterranean, Fact and Fiction*. Turnhout, Brepols, 249–272.

⁹³ Ventrone Vassallo, G. 1996. Decorazione con inserti di ceramica nell’architettura islamica dello Yemen. In Centro Ligure per la Storia della Ceramica (ed.), *Atti XXVI convegno internazionale della ceramica: ‘I bacini murati medievali. Problemi e stato della*

Yemen held a crucial position regarding trade connections with the Eastern Mediterranean and the Indian Ocean world. A high number of glass and metal objects made in Mamluk Syria and Egypt for the Rasulids in Yemen, featuring their coats-of-arms, has been preserved, and we also know of artifacts which were commissioned in India for Yemenite patrons. Around 1130, Joseph b. Abraham, a Jewish merchant from Aden, wrote to Abraham Yiju, the owner of a bronze workshop at Dahbattan at the Malabar coast:

Make me a nice lamp from the rest of the copper. Its column should be octagonal and stout, its base should be in the form of a lampstand with strong feet. On its head there should be a copper lamp with two ends for two wicks, which should be set on the end of the column so that it can move up and down. The three parts, the column, the stand, and the lamp, should be separate from one another. If they could make the feet in spirals, then let it be so; for this is more beautiful.⁹⁴

Trade connections between Yemen and the Swahili coast were equally strong. In 1336, a ship ‘from Kilwa,’ loaded with rice, reached Aden, and Qadi Masud, living in Aden in the late fourteenth century, stated that ships from ‘each small city of the Sawahil’ brought goods to the littoral, from where they were then shipped to Aden and the Hadramawt.⁹⁵ Sharma was another transit harbor strongly connected with East African trade,⁹⁶ and Yemeni mustard ware, which was produced at the end of the thirteenth and in the fourteenth century near Hays on the Tihama or in the vicinity of Aden,⁹⁷ and which was the only type of ceramics Yemen widely exported outside its area of origin was unearthed at Kilwa, Manda and Shanga, where it is dated to ca 1250 to 1350.⁹⁸ Those traveling between Yemen, the Swahili coast and beyond will have recognized the use of ceramic bowls in architectural structures at the different sites.

In the last two decades, the overcoming of the divides of different sub-disciplines such as Islamic, Byzantine, Jewish, African, Latin American, Eastern European, and Western art history has been one of the core interests of the field. It has also been a time of challenging established canons. Western European art history, for example, which was traditionally characterized in scholarship by a hierarchy of ‘high arts’ (architecture, sculpture, and painting) versus ‘minor’ or ‘applied arts’ (e.g. textiles, ceramics, porcelain, metalwork) is questioned both in terms of the hierarchy of media and in terms of ‘Westernness’. Artifacts from other parts of the world, which reached Europe and had a crucial impact on the European art production, receive more and more scholarly attention.⁹⁹ The study of Islamic artifacts in Western Church treasuries, where these objects arrived as luxury items, reliquaries, or sometimes conceived and reinterpreted as Christian relics, is well-established.¹⁰⁰ Pisan bacini are now part of this new canon of transcultural art history. But what about their counterpart in premodern East Africa? The Swahili coast was and is part of the dār al-islām. Its art and architecture, however, is nonetheless strongly marginalized or even entirely ignored in art history, also in the sub-discipline of Islamic art history.

When it comes to incorporating Middle Eastern, Chinese, and South-East Asian ceramics and porcelain bowls inserted into premodern East African architecture into the field of art history, one can, of course, ask whether they belong to Islamic, African, or Indian Ocean art history. Yet, one could also ask whether

ricerca, Albisola, 28-30 maggio, 1993. Albisola, Centro Ligure per la Storia della Ceramica, 329–345.

⁹⁴ Goitein, S. D. 1973. *Letters of Medieval Jewish Traders*, translated from Arabic with introductions and notes, Princeton, WHO, 195.

⁹⁵ Fleisher, Lane, LaViolette et al. 2015 (see note 8), 107.

⁹⁶ Fleisher, Lane, LaViolette et al. 2015 (see note 8), 106; Rougeulle, A. 2005. The Sharma horizon: Sgraffiato wares and other glazed ceramics of the Indian Ocean trade (ca 980–1150). *Proceedings of the Seminar for Arabian Studies*, 223–246.

⁹⁷ Horton 1996 (see note 4), 291.

⁹⁸ Chittick 1984 (see note 16), 81f. and fig. 39; Horton 1996 (see note 4), 291.

⁹⁹ Cf. e.g. Mack, R. E. 2002. *Bazaar to Piazza: Islamic Trade and Italian Art, 1300–1600*. Berkeley et al., University of California Press.

¹⁰⁰ Shalem, A. 1998. *Islam Christianized: Islamic Portable Objects in the Medieval Church Treasuries of the Latin West*. Frankfurt am Main, Peter Lang.

this material challenges these traditionally established categories, questions them, breaks them up, and leads to a more open and more connected picture.

Though this contribution has been written from an art historical perspective and though it has argued for putting the premodern art and architecture of the Swahili coast on the map and for incorporating it stronger into the curricula of art history, this article is not about 'claiming' this material to the discipline. Rather, it sought to outline why art history would profit from gaining a stronger awareness of these matters. It aimed at advertising a closer collaboration with other disciplines, to profit from each other's strengths and research results in a transdisciplinary manner with archaeology, anthropology, history, and further fields of study.

For the current turn towards transcultural and global art history, art history drew decisively on other disciplines. Regarding Mediterranean art history, for example, the input from history with the works of Shelomo D. Goitein and Fernand Braudel was crucial.¹⁰¹ Avinoam Shalem's final reference to Lamu and the Swahili coast in a survey article asking 'qu'est-ce que l'espace méditerranéen au Moyen Âge?'¹⁰² gives ground for hope that the Indian Ocean world and the Mediterranean, connected historically, will also be stronger linked in future art historical scholarship. By means of the lives of scholars and by means of institutions, the two seas are indeed already highly entangled: For many years, the historian Kirti N. Chaudhuri thought and taught the Indian Ocean world at the European University in Florence.¹⁰³

Studying the seas stronger in conjunction would not least provide new insights regarding the impact of imported ceramic and porcelain bowls on the built environment. It is in fact the intersections, frictions of the 'local' and the 'global', the 'mobile' and the 'immobile', of architecture, objects, and ornamentation in a wider network which are articulated in the buildings under discussion. In a moment, when transcultural interactions, issues of materiality, portable objects, and ornamentation are among the core interests in the field of art history, and when research projects seek to bring together scholars from different sub-disciplines and fields with diverse competences, it is time to dedicate more joint attention to the intersection of architecture, objects, and ornamentation at sites such as Kilwa, Songo Mnara, and Pisa, to think beyond established categories and thereby shed new light on artistic dynamics across the seas.

¹⁰¹ Goitein, S. D. 1967-1988. *A Mediterranean Society: The Jewish Communities of the Arab World as Portrayed in the Documents of the Cairo Geniza*. Berkeley, University of California Press, 5 vols.; Braudel, F. 1966-1967. *La Méditerranée et le monde méditerranéen à l'époque de Philippe II*. Paris, Armand Colin, 2 vols.

¹⁰² Jäggi, C., Kühnel, B., Quirini-Popławski, R., Shalem, A., Wolf, G. with Michele Bacci. 2014. Qu'est-ce que l'espace méditerranéen au Moyen Âge? *Perspective 2*: 271-292: 289 and note 37.

¹⁰³ Halikowski Smith, S. C. A. (ed.). 2011. *Reinterpreting Indian Ocean Worlds. Essays in Honour of Kirti N. Chaudhuri*, Newcastle, Cambridge Scholars. Cf. Chaudhuri, K. N. 1985. *Trade and Civilization in the Indian Ocean: An Economic History from the Rise of Islam to 1750*. Cambridge, Cambridge University Press; Chaudhuri, K. N. 1990. *Asia Before Europe: Economy and Civilization of the Indian Ocean from the Rise of Islam to 1750*. Cambridge, Cambridge University Press.

Long-Distance Arab Sailing in the Indian Ocean before the Portuguese

Oceanic connections in the sources

Marina Tolmacheva

Washington State University

Email: tolmache@wsu.edu

Pre-modern system of navigation in the Indian Ocean is a complex, localized achievement of a multicultural civilization. This system involves the knowledge, control, and use of two great natural resources of the region's environment: the monsoon wind and climate system and the orientation by the stars consistently visible in the tropical sky above the ocean. Less celebrated in the history of world civilizations than Islamic mathematics, medicine, and natural sciences, Arab navigation first attracted interest of Western Orientalists only in the early 20th century. Historical sources do not present a clear picture of the indigenous peoples' participation in Indian Ocean navigation, whether in modern times or in Antiquity.¹ Much of our knowledge of the life of the coastal cities and ports as well as of the oceanic shipping and travel is derived from medieval Arabic sources, primarily geographical treatises and travel narratives. This essay sketches the range of challenges facing the mariner venturing upon the ocean's waters in the age of sail and the choices available to ship pilots in navigating the precarious maritime routes of the vast region. The focus is on Arabic records of long-distance sailing in the Indian Ocean prior to the infusion of European maritime practices developed first in the Mediterranean and later also in the Atlantic. The pinnacle of pre-Portuguese navigation science in the Indian Ocean is represented by the works of the 15th-century Arabian pilot Ahmad ibn Majid al-Najdi al-Sa'di (often abbreviated to Ibn Majid), discussed below.

In the age of the sail, navigation was controlled by wind and current. The Indian Ocean region climate and weather patterns are controlled by the monsoon systems. To sail the Indian Ocean, pilots learned to use monsoons since before our era. The Chinese knowledge of monsoons was documented first, but the Indians and Middle Easterners benefited from them as well. The Greeks learned about sailing with monsoons between the Red Sea and India no later than the expedition of Nearchus (326-5 BC). Monsoon winds reverse direction seasonally. Both the western and eastern halves of the Indian Ocean are subject to the monsoon regime. The regularity of monsoons dominated the sailing calendar, while the strength and hemispherical reach of the winds made long-distance shipping possible in open-sea lanes.

The sources

Arabic narrative sources, such as travel memoirs and books by Arab geographers provide diverse, dispersed information of travel and trade between China and the Arabian Sea ports. As early as the second century of Islam information, circulating in Arabic or possibly Persian, about maritime trade routes to India and the Far East found its way into the emerging secular book world. There is no single pattern or template among the sources: learned treatises may provide the coordinates of latitude and longitude for port cities, the distances between port destinations may be expressed in days of sailing, the voyagers who are passengers may or may not say anything about their ship, crew, or weather conditions. Several oceanic routes are

¹ As this volume was going to the publisher, *Les Cahiers d'Afrique de l'est* presented No. 51: Special Issue on Global History, East Africa, and the Classical Traditions (Nairobi: IFRA, 2016). Several essays make connections between Antiquity, Middle Ages, and modern history and attempt to deduce the level of African participation in and contribution to the transmission of geographical and nautical knowledge. I thank Dr. Carla Bocchetti for the reference.

described, and even distances between ports mentioned, in the *Kitab al-Masalik wa'l-mamalik* ('The Book of Routes and Realms') of Ibn Khurdadhibh (c. 820-912 AD) and the anonymous *Akhbar al-Ṣin wa'l-Hind* ('Reports of China and India'). Tibbets (1971: 2) suggests that earlier compilations existed and may have been mined for information. It is a rare academic author who, like al-Mas'udi, informs the reader that he personally sailed the route to an East African destination from Oman in the year AH 315/926-7 AD (Kubbel' and Matveev 1960: 226). The 'Marvels of India' (*Adja'ib al-Hind*), compiled by the Persian author (captain?) Buzurg ibn Shahriyar c. 953, contains many a shipwreck story or mystery island report, some of which carry the roots of Sindbad the Sailor folktales.²

In the twelfth century, al-Idrisi (1100-1165), the greatest of medieval Arab geographers, often uses itineraries to structure the description of countries, major geographical features and settlements. Thus, he names several port cities on the East African coast; distances are often measured in days of dry-land travel, but sometimes the equivalent in days of sailing is included. However, there is no discussion of open-sea sailing, of courses to steer by or any mention of star observation. Al-Idrisi provides maps with his narrative, marking the sections of larger areas familiar to travelers by that time: *Barbara* for the Somali peninsula, *al-Habasha* for Ethiopia, *Zanj* (the Ancient *Azania*) south of the Juba River, and *Sofala* for southeast Africa (Idrisi 1970, see Climate I, Sections 5-9). Al-Idrisi was well acquainted with Ptolemy's geography, which he knew from al-Khwarizmi's ninth-century rendition (Ducène 2014: 247). There, locations are determined by degrees of latitude and longitude, but not in Idrisi's *Geography*. Even though al-Idrisi had done some sailing on the Mediterranean, he is silent about the methods of navigation and thoroughly confused about the shape of the Indian Ocean (see, for example, Tolmacheva 2006 and Tolmacheva 1991). His maps are useless as aids to detailed itineraries.

In the fourteenth century, the greatest medieval traveler Ibn Battuta (1304-68) relates the routes of his personal voyages, often accompanied with information about the length of delays caused by waiting for the appropriate sailing season. Though not a sailor, his maritime experience was extensive: early in his travels he sailed to East Africa and many years later to the Maldives, Ceylon, the Bay of Bengal, Indonesia and probably even China. In medieval Islamic travel literature his is the single most extensive and detailed description of the visited ports cities, their tax and harbor administration, types of vessels found there and passenger arrangements therein.

Ahmad ibn Majid (c. 1430-1500) was an outstanding practitioner of navigation in monsoonal climate of the Indian Ocean as well as a teacher of the naval art. He wrote a nautical encyclopedia specific to the Indian Ocean and a number of sailing instructions for specific routes and navigation all the way from Arabia to Africa and Indonesia. Out of a total of forty named compositions, written in prose and verse, more than twenty have survived.³ This legacy has been largely published in facsimile editions, and the most significant of them have been translated into European languages. The most prominent is the encyclopedic *Kitab al-Fawa'id fi Usul 'Ilm al-Bahr wa 'l-Qawa'id* ('The Book of Useful Knowledge on the Principles and Rules of Navigation'), written in 1490. Known in three manuscripts, two of which are stored in Paris, and the third in Damascus, it was published in Arabic facsimile by Gabriel Ferrand in 1921 (for facsimile reproduction see Ferrand 1921) and translated into English by G.R. Tibbets (Tibbets 1971).⁴ In addition to other works in the Paris manuscripts, a unique manuscript in the Institute of Oriental manuscripts in St. Petersburg, Russia contains three sailing poems published in facsimile with a Russian translation by T.A. Shumovsky (Shumovskii 1957). Myron Malkiel-Jirmounsky issued the Portuguese translation based on Shumovsky's Russian version (see Ahmad ibn Majid 1960).

² For an English translation, see Buzurg ibn Shahriyār 1981 and Buzurg ibn Shahriyar 1928; for French translation see Buzurg ibn Shahriyār 1878. For the Arabic text edited by P.A. Van der Lith see Buzurg ibn Shahriyār 1883. I use here my own translations from the Van der Lith edition.

³ For Ibn Majid's complete name and the list of his works see *Encyclopaedia of Islam* (EI²), 3:856-859.

⁴ For Russian translation see Shumovskii 1984.

Participants

Islamic navigation in the Indian Ocean and the Red Sea and the Persian Gulf is often referred to as Arab navigation largely because extant sailing instructions and other works relevant to navigation are composed in Arabic.⁵ Arab domination on the sea routes connecting Arabia, East Africa, and India is first attested in the Greek *Periplus of the Erythrean Sea* dating to the first century AD (Casson 1989). Regarding non-Arab traffic, data lack precision. Sassanid Persia seemed to control the navigation in the western part of the ocean in the fifth and sixth centuries (Hasan 1928). Continued Persian participation may be deduced from the references to east-bound shipping from the Persian Gulf via Siraf to India and China in *Kitab al-Buldan* ('Book of Countries,' c. AH 290/903 AD) by Ibn al-Faqih al-Hamadani (Kubbel and Matveev: 72-74). Siraf ship-owners, along with Omanis, are then listed as active in East African trade in the *Muruj al-Dhahab* ('Meadows of Gold,' AH 336/947-8 AD) by al-Mas'udi (Maçoudi 1: 206, 233-4).

Siraf was hit by a strong earthquake in 367/978 and again in 398/1008 (Ambraseys and Melville: 39), losing much of its earlier significance as port. Participation of Indian Muslims and non-Muslims in navigation and piracy is recorded by the voyaging Ibn Battuta in the 14th century.⁶ Arabic sources are generally silent on the role of Chinese in Indian Ocean navigation; for example, we lack Arabic records of the 15th-century maritime expeditions from China led by Zheng Ho.⁷ However, the presence of 'Chinese ships' (*al-sufun al-siniya*) is noted by Ibn al-Faqih in the Persian Gulf (Kubbel' and Matveev: 74), while Ibn Battuta informs us that 'on the Sea of China travelling is done in Chinese ships only' (Ibn Battuta 1929: 235). However, this is contradicted by his own experience: When Ibn Battuta was advised to leave China, he went to Zaytun (Quanzhou) where he 'found the junks ready to sail for India. Among them was a junk belonging to al-Malik al-Zahir, the ruler of Jawa (i.e. Sumatra – M.T.), the crew of which were Muslims. His agent knew me and was delighted at my arrival.' (Ibn Battuta 1929: 301).

Some later sources mention the existence of earlier charts under the Arabized Persian name of *rahmani* (*rah-namaj*) or the navigational instruments, the types of ships and sailing equipment. However, we know more about ports and transported commercial goods than of the sea routes of the earlier period. Even such lively and informed medieval writers as al-Jahiz (al-Jahiz 1981: 301) or geographers who also traveled, like al-Mas'udi or al-Idrisi, preserved for us only fragmentary information on the movement of people and goods between important centers of production, consumption, and power. On the basis of such incomplete information we can only partially recreate the geopolitical picture of the economy, commerce and navigation, and even that for the most part only in the Western region, i.e. in the coastal zone of the Arabian Sea. Before the 14th century, only a few extant compositions contain concrete business information about the practical side of shipping. An important exception in the 13th century is the South Arabian author Ibn al-Mujawir (d. 690/1291), who described the method of monitoring from the mainland of vessels approaching dry land, techniques of long-distance voyages in equatorial waters, and organization of port affairs in Aden and on Socotra (see Arabic text in Ibn al-Muğawir 1951 and English translation in Ibn al-Mujawir 2008).

In the 14th century, the figure of Ibn Battuta (traveled in 1325-68) overshadows many of his predecessors, not only on the volume of common historical and cultural information – but also geographical coverage of his travels, including several sea voyages in the Indian Ocean basin. Robbed of his records, but possessed of remarkable memory and unbounded curiosity, Ibn Battuta reports to the Arabic reader previously unknown names of Chinese vessels, describes their dimensions, equipment and cabins for passengers. Having experienced shipwreck and repeatedly withstood pirate attacks, he impressed contemporaries with narratives on the South and South East Asia – seemingly exotic to such an extent

⁵ See more on this in Tolmacheva 2008b.

⁶ Note that the locals spoke with Arab Ibn Battuta in Persian (Ibn Battuta 1994: 865, 882).

⁷ For a survey of relevant Arabic sources see Tibbets 1979.

that many of his stories were treated as lies. But neither Ibn al-Mujawir nor Ibn Battuta were known to Ahmad Ibn Majid. A prolific author, Ahmad ibn Majid brought together in his works the art of navigation, a thorough knowledge of the environment in a large oceanic region, and instruction in astronomy, naval technology, and nature observation.

Monsoon navigation

The shape of the African and Asian continents, with the Indian subcontinent protruding southward, divides the Indian Ocean into two distinct monsoon areas, the Arabian sea monsoon branch in the west and the Bay of Bengal branch in the east. The sailing calendar was naturally based on monsoons within the solar year. The southwest monsoon *kaws* (Arabic, *kusi* in Swahili) begins in March on the East African coast, slowly spreading eastwards. It reaches its maximum strength in June and blows across the ocean until October, bringing the heaviest rains to India in June and July and causing heavy swells which made landing difficult and even closed the ports.

The northeast monsoon *azyab* originates from the Indian mainland in early October, reaching Zanzibar by late November. It makes it easy to sail almost directly from Malacca to Jedda as the wind continues into the Gulf of Aden. Between the monsoon periods, voyages were made in other directions, using variable winds and breezes. March to May are such changeover months in the northwest corner of the ocean. In the Gulf of Aden the predominant non-monsoon wind is easterly. Travel from India to Africa had to be begun by early February. From Aden and Yemen one needed to leave in mid-October, and from northeast Arabia by late January, but one could not sail to Socotra during the same season. From Socotra to southeast Arabia one sailed in March-April, while India could be reached also by departing in May and during the August-September season *dimuni*. Travel down the African coast was recommended from mid-November to April. From Bengal one had to leave westward by January; leaving from Malacca, Java and Sumatra in February or March one could still reach Ceylon. Travel from Gujerat to Bengal and Indonesia began in April or late summer. October brought cyclones to the Bay of Bengal. The eastbound roundtrip journey from the Persian Gulf across the ocean took eighteen months. China-bound ships started from the Gulf in September or October, reached Kalah Bar in January and passed through the Strait of Malacca in time to use the southern monsoon in the Sea of China. Return from China to Malacca took place with the NE monsoon between October and December, then ships could cross the Bay of Bengal in January and reach Arabia in February or March (Tolmacheva 2008b: 1735).

On the Swahili coast, the marine year began in early August, when the gusty southern *kusi* wind subsided. The local new year's celebration, called *siku ya mwaka*, marked the resumption of shipping activity after a pause during May-July. The Persian word *Niruzi*, also used for this festival, gave rise to the false impression that this calendar is Persian in origin. This term is not to be confused with Nowruz, the Persian solar New Year of the Spring equinox (21 March). The sailing Niruz/Nowruz had a sliding date, which for Ibn Majid's time fell in early November: for example, the Niruz of AH 893 fell on 14 November 1487, while in AH 901 on 12 November 1496.

Different sub-periods within the monsoon were best suited for plying the routes between Malindi and Madagascar, Kilwa to Sofala and back, northbound from Sawahil (northern Tanzania and Kenya coasts) to Mogadishu, Aden and thence to Hormuz or Gujarat and the Maldives. Travel north was more difficult due to both the southwest monsoon and the strong contrary currents in the channels between the mainland and the islands. The "normal" boundaries of Swahili sailing were Cape Delgado in the south and Mogadishu in the north. In the fourteenth century the city of Pate briefly attempted to dominate the coast. But it always had to compete with its neighbor Lamu and the more remote Mogadishu, Malindi, Mombasa, and the powerful Kilwa (Tolmacheva 1993: Introduction). In island settings, it was generally faster, easier and safer to sail from one destination to another than travel overland well into

the nineteenth century (Tolmacheva 2008a). Regional and local rivalries involved sailing to foreign lands (Arabia or India) or to the mainland, and attacks or blockades from the sea.

Al-Mas'udi calls the Sea of Zanj, relatively little known to tenth-century passengers, the most horrifying of all he had sailed. He mentions by name captains of some shipwrecks on the East African route and specifies that the island of *Qanbalu* (Pemba) is the southernmost destination in the Sea of Zanj. The distance between the mainland and *Qanbalu* or some other Zanj islands is one to two days' sail (Ma'oudi 3:31). The lands of Sofala and al-*WaqWaq* (here, Madagascar) are in the far reaches of the Land of Zanj, on the lower (that is, southern) part of the channel between them (Ma'oudi, I: 233-4).

Sofala and WaqWaq

The southern reaches of the East African coast were slow to make their appearance in learned geographical treatises. Sofala, which later gave the name to the port city in Mozambique, was the gold-producing land that was hard to reach and full of dangers. In the southwestern part of the Indian Ocean, sailing between the African mainland and the island of Madagascar was made difficult by the strong southward currents in the Mozambique channel and the weak reach of monsoons. Swahili legends of origin would put Muslim settlers on the Comoros as early as the eighth century, but the first trustworthy reports speak of Malay (*Waqwaq* or *Qumr*) people reaching African destinations as a time when Mozambique was barely known to the Arabs in Asia and no evidence exists for long-distance voyages from the mainland sent by Africans.

One of the stories in *The Marvels of India* relates a famous episode of kidnapping a Zanj king by the Arab merchants who sell him into slavery. The merchants sailed from Oman in the year AH 310/922-3 AD, aiming for *Qanbalu* (Mkumbuu on Pemba Island), then an established port for Arab trade (including slave trade). However, a strong wind blew them off course and drove the ship to the Sofala of the Zanj, much further south and then perceived as a land of cannibals. Taken into the presence of the king, the merchants dissembled and claimed they had intended to visit his country. The comments of the narrator Isma'iluya confirm the awareness of coastal societies of their dependence on wind regimes for long-distance trade:

He (the king) said: 'You lie. Your intention was for Qanbaluh, not our place, but the wind overpowered you and drove you to our land.' We said: 'That is how it was. What we said was meant to dispose you towards us.' (Buzurg 1883: 51. My translation).

Ten years after the kidnapped king and his entourage were sold in Oman, the captain and his crew were again blown off their course to *Qanbalu* and driven by the wind to Sofala of the Zanj. Fearful of being eaten, they instead encounter the former king who had been converted to Islam in Basra, escaped to his homeland and now wishes to establish regular trade relations with Muslim merchants (Buzurg 1883: 54-60). In another passage, the distance between *Qanbalu* and Sofala is stated to approximate one thousand five hundred *farsakhs* (Buzurg 1883: 51). At roughly 4,500 miles this is a vast overestimate more likely to represent the distance between Oman and Pemba or else the *farsakh* measure is mistakenly used for miles (one *farsakh* equals three miles).

The name *WaqWaq*, of Malay origin, is usually associated with transoceanic Malay migrations to Madagascar and the Comoros (see Tolmacheva 1987 and Tolmacheva 2003). Some migrations apparently led to encounters with mainland populations in Eastern Africa and even Southeast Arabia. The earliest report of a Malay attack against a northern Swahili town (again *Qanbalu*, on Pemba Island) dates back to 945. *The Marvels of India* tells of a thousand boats attacking the city from the sea and surrounding channel. The assailants had plundered parts of Mozambique and an [unnamed] island six days' distance away. Their home was at the distance of one year's journey:

Ibn Lakis told me that they witnessed something astonishing regarding the people of WaqWaq. In the year AH 334 (AD 945-6 – M.T.) they arrived [at Qanbalu] in about a thousand boats and attacked them vigorously, but could not prevail because Qanbalu is surrounded by a fortress, and round the fortress is a moat filled with sea water. In this moat Qanbalu is like a fortified stronghold. The locals captured some of the arrivals and asked them why they came to their land, bypassing all the other countries. Then the foreigners told them that they came seeking goods wanted in their own country and in China, such as ivory, tortoiseshell, leopard skins, and ambergris. And also because they seek Zanj (slaves) wanted for their labor ability and sturdy physique. Their journey there took them a year. They pillaged several islands at a distance of six days' sail from Qanbalu. They conquered some villages and towns of the Sofala of the Zanj that are known, apart from what is unknown. If what they said about them taking a year to travel was true, this would confirm what Ibn Lakis said about the islands of WaqWaq being located opposite China, but Allah knows better (Buzurg 1883: 174-5).

Such accounts focus on the foreigners' sailing mastery and Malay maritime crafts. In the thirteenth century Ibn al-Mujawir speaks of an earlier, vaguely ancient invasion of Aden by the Malagasy people (*al-Qumr*) who arrived in great numbers in boats to displace local fishermen. (The name *al-Qumr*, from 'Khmer,' eventually became attached to Madagascar in Arabic medieval usage, and is still preserved in the name of the Comoros). These invaders were later expelled by Kushites from the Somali peninsula (*Barabir*). These people disappeared, and their sailing skill had been lost, but a boat from *al-Qumr* arrived at Aden in AH 626/1228-9 AD. Ibn al-Mujawir describes it as an outrigger vessel; he admires the sailing skill of these people who managed to sail from Madagascar to Aden in 'one monsoon,' instead of (the usual) three stages involving layovers at Kilwa and Mogadishu.

They departed from al-Qumr and reached Aden in one swoop, with one monsoon. Ibn al-Mujawir says: 'These peoples have died out and with them this art. Their ways have ceased and no one remains in our time who knows their route nor their circumstances and lifestyle.'

...

Ibn al-Mujawir says: from Aden to Mogadishu is one monsoon (sailing season), from Mogadishu to Kilwa another monsoon, and from Kilwa to al-Qumr the third. But those people combined the three sailing seasons in one. In the year 626 (1228-9 AD – M.T.) there arrived at Aden a ship from al-Qumr that followed that route: it departed from al-Qumr, steered for Kilwa and anchored at Aden. Their vessels have outriggers because sailing in their seas is difficult due to frequent sea storms and many shallows.

When these people's authority weakened, the Barbara (al-Barabir) took over and forced them out. They took control of the country and settled the valley. This area is now built up with palm-leaf cabins, and they were the first to build them in Aden. After them this place became destroyed and remained desolate until the people of Siraf moved there from Siraf, as mentioned previously... (Ibn al-Muğawir 1951: 116-117. My translation).

Sailing to Sofala

Gold and slaves eventually made Sofala a desirable but still mysterious destination. Ibn Majid is the first author to associate Sofala with the gold of Monomotapa. The poem of sailing instructions to Sofala (the *Sufaliya urjuza* poem) became one of his most famous compositions. In addition to Shumovsky and Malkiel-Jirmounsky, there is an English translation by Ibrahim Khoury (Ahmad ibn Majid 1983) and French by Claude Jouannes (Ahmad ibn Majid 2001). This 'guide' for the pilot contains the description of the monsoon route from southwest India to Socotra and Mozambique, connecting the long west-bound lanes with the south-bound route to East African islands, the mainland coastline, and Madagascar. Ahmad ibn Majid invariably provides a number of options so his instructions may serve pilots on different lanes of the same major route. As identified by Ibrahim Khuri, he outlines

five principal routes from India to East Africa radiating from Calicut, Dabul, Sumanat, Diul-Sind, and al-Atwah. Here is an example of sailing directions from Calicut or the Laccadives to the coast of Zanj:

- Whoever travels to Zanjabar (from Calicut) must control the wind and current.
- His monsoon (sailing season) starts on the 70th (day of Niruz) at departure, and his arrival will be on the 80th day.
- But he who departs on day 90 will not reach his destination, except in rare years.
- If you raise the flag of the Fal Islands (Laccadives) in the direction of Zanj, take my advice:
- Steer by the western rhumbs and by *Jawza'* (Orion) to the *Sif (Ṭawil)*, then continue toward the land (Shumovskii 1957 and Ahmad ibn Majid 1983; verses 24-28).

These lanes either first converge on Socotra and then go toward *Sif Ṭawil*, or lead directly from India to *Sif Ṭawil* (Ahmad ibn Majid 1983: verse 29). The name *Sif Ṭawil*, or Long Beach, denotes the Somali coastline; Ahmad ibn Majid uses it to include the northern Swahili (*Zanj*) coast (Shumovskii 1957: 127). For each route he indicates the points of the star compass and the altitude of stars that may be visible. From *Sif Ṭawil* the next section takes the pilot to the *Sawahil* (northern Swahili coast);⁸ there Ibn Majid names a dozen ports and island cities from north to south. The third section enumerates islands and harbors from Zanzibar to Kilwa (Ahmad ibn Majid 1983: verse 30). The coast of Sofala, which Ahmad ibn Majid believes to be ruled by the king of Kilwa, starts from Kuwama Bay to the island of Wazah. Finally, he outlines the navigation from the Zanj coast and Sofala to Madagascar and the Comoros, naming Angazija, Damuti, Sa`da and Linjani (Ahmad ibn Majid 1983: verse 31). For those sailing from Oman, Socotra is an intermediate destination or landmark. To reach it from al-`Atwah and Qalhat (northeast Oman), one must navigate by the setting of Canopus [SSW]. . .

- till arriving at (the island of) Masira. Then steer by Scorpio [Antares-M.T.] in any direction (i.e., rising or setting, SE or SW – M.T.), sail and calculate:
- If it is within the 90 days of Niruz, beware the winds for aggravation . . .
- From Zafar (southeast Oman) cross the sea by the setting of *Suhayl* [Canopus, SSW]. You shall see Socotra, your guiding point.
- If you depart from this island, set the course by the setting of *Mukhannith* [Achernar, S by W]; this is a good bearing.
- These bearings are for travelers; they leave Socotra on the left.
- Turn toward (the setting of) *Suhayl* [SSW], and beware of water if you follow the original course
- Until the course to Ḥafuni (Ras Hafun, Cape Hafun) becomes safe for sure⁹

To reach southeastern African coast from Oman or Socotra, Ibn Majid provides options bypassing the Masira Island, and then outlines the sailing lanes from *Sif Ṭawil* (Somali coast) to *Sawahil* coast (now Kenya and northern Tanzania), from Zandj and Ahwar (i.e., from Zanzibar southbound) to Sofala, and finally, lanes toward and between the islands of Madagascar and the Comoros (and the mainland). He reminds the student user of his guide of the monsoon time restrictions: sailing on the 90th day may be too late except in rare years; Sofala has only one *mawsim* (sailing season), of 20 days' duration only. But the *mawsim* for Ahwar (in the Gulf of Aden) to Qumr is flexible, sailing is possible two or three times a year. The starting date for Kilwa is the 90th day, for Angazija it is at 100 days of Niruz (Shumovskii 1957: folio 95v. My translation). Sailing northbound, one finds different choices: There are two seasons for travel from al-Qumr to Sawahil. The sailing distance between the mainland and southern Madagascar (al-Qumr) is 8 *zams* or 24 hours (Shumovskii 1957: ff. 95v-96r).

⁸ About this name, see Tolmacheva 1976.

⁹ I am using Khuri's translation here, lightly edited (Ahmad ibn Majid 1983: 182-183, 186-190).

Sailing east

The lanes in the eastern part of the Indian Ocean are described in the *Malaccan poem* (*Urjuza Ma'laqiyya*), containing routes leading from the southern Indian mainland to Ceylon to Sumatra, Siam, Malacca and Java (Shumovskii 1957: ff. 97v-104r). The departure is possible at the 60-day mark of Niruz and until 100th day. Ibn Majid cites rhumb star measurements (astronomical elevation) for Ceylon, Andaman & Nicobar islands on the course toward Sumatra and then Malacca (Shumovskii 1957: ff. 97v-104r). The first concern is to pass or circumnavigate Ceylon:

- Leave (Ceylon) on the left; steer by the rising of Altair [E], my friend, for ten
- *zams* (30 hours), until you leave Ceylon behind and escape the blow of typhoon.
- From here steer for two days by Arcturus [ENE], and you will have circumnavigated Ceylon (Shumovskii 1957: f. 98r. My translation).

Unlike sailing in the north-south direction in the western part of the Indian Ocean, as along the African coast, the pilot must use different stars or sets of stars sailing east-west. However, staying on course is relatively simple with stable winds for long stretches of time, and Ibn Majid more often counts sailing time units on this itinerary than star altitudes. For example:

- Steer by Altair [E] for forty (*zams*). Then be watchful and understanding.
- With this measurement you will arrive at the Nicobars. Look and you will see their mountains
- After forty complete and correct *zams* (that is, 120 hours of sailing – M. T) (Shumovskii 1957: f. 98r-98v).
- From your speaker: forty *zams* from Ceylon, from the east locations at all times, on a happy ship overloaded with goods.
- From here (ends) half of the route from the outward coast of Ceylon, for sure.
- Count these *zams* from the day of sailing en route to Nicobar, to achieve success.
- After sailing one *zam* measure the altitude of Arcturus: a total of sixteen, o brave one.
- Fifty-nine and forty – that makes ninety-nine (*zams*) to the Nicobars.
- One half of that is Ceylon, from its eastern (coast), but your circumnavigation increases the count.

The major portion of the route takes about 100 *zams* or 300 hours of sailing. Ibn Majid explains why he speaks of the bearings and times elapsed rather than star observation, reiterating the most reliable route estimates in open oceanic expanses:

- ... I consider the *zams* more reliable than *qiyas* measurement (of star altitude).
- If the *zams* you have sailed approximate one hundred, this is clear:
- From the area of Calicut to the Nicobars it takes thirteen days of sailing (Shumovskii 1957: f. 99v).

After weeks in open sea, great care must be taken in the Malacca Strait. Finally, as one approaches Malacca, there are strong orienteers:

- Know that when Fulu Finanj (Palembang) disappears you will see Fulu Sanbilan of Malacca and enter.
- The Malaccan Fulu Sanbilan is nine (islands) altogether. Steer toward these islands with full dispatch...
- Leave this long (island) on your right. It is verily surrounded by islets.
- Leave two (of these) islands, oh pilot, on your left. In this place there are people.
- Be careful as you arrive at Shin-Sil, the islands that you see with your own eyes (Shumovskii 1957: f. 101v).

This route was probably sailed by Ibn Majid more than once, but gaining dry land in Malacca did not bring him joy. The concluding verses of the Malacca *urjuza* express such strong dislike for the local populace that some have taken it to imply the presence of Portuguese in Malacca at this early stage (Tazi: 104). However, the timing of composition of the *Ma'laqqiya* does not support the hypothesis: the first European fleet reached Malacca in 1509, after Ibn Majid's death. The negative references below may be instead to local syncretism of religions, but the urging from the veteran sailor to the visitor to beware is unmistakable:

- There it is, the port on Malaqqa's western side – exactly, oh friends.
- As for Malaqqa, its inner part, as we explained, is between Fulu Afi and Sina.
- Enter it, having gained the port. Your booty is lightweight! Then the route
- by water is at five fathoms, and when it becomes four – drop the anchor and pull it up.
- People will approach you – they are not good people! They are totally ignorant of rules.
- An infidel marries Muslim women, and a Muslim takes (in marriage) infidel women.
- You might say 'infidels' – but they are not (exactly) infidels. If you say 'Muslims' – but we do not know (the truth of that).
- There is thieving – they tolerate it. What is going on among them they have not declared illegal.
- Dogs eat a Muslim's (lawful) meat, but that is not forbidden among them.
- They drink wine in marketplaces and do not pray before departure.
- They breach trust and virtue and are ready with oppression and injustice.
- Their doings are lies and procrastination with gifts, trade and other business,
- So take care to exercise precaution, do not pound rock with a jewel (Shumovskii 1957: f. 104r).

In Lieu of Conclusion

Ahmad ibn Majid was the first to consolidate in writing the extensive data about meteorological and maritime conditions facing the sailor in the two major parts of the Indian Ocean, eastern and western. Divided by the subcontinent, they present different atmospheric and hydrological conditions and historically constituted two separate shipping zones, and Ibn Majid clearly identifies the termini of open-sea lanes. The western part, closer to Arabia and more frequently described, had Calicut (now Kozhikode) on the Malabar (southwest) coast as the major traffic terminus and trade center. Ceylon (Sri Lanka) and the Laccadive (southeast) coast served as destination, transfer and departure points for the Bay of Bengal and points further east.

At the beginning of the 16th century, especially with the Ottoman conquest of the major Arab countries in 1516-17, Ottoman interests in the Indian Ocean expanded rapidly. In the Mediterranean, the growing Ottoman naval presence had led to appearance of Turkish geographical and nautical maps, as well as portolans and manuals (see Soucek 1991 and Sidi Celebi 1834). In the same period the naval laws of the Muslim Kingdom of Malacca became codified under sultan Mahmud Shah, who reigned in 1488-1511 (about the code see Ferrand 1928: 178-180), and various categories of seamen and shipboard personnel got registered. The twelve categories and ranks listed in the 16th century Persian (Moghul) source *Akbar-Nama*¹⁰ show professional distinctions and a hierarchy of ranks among the younger or less trained workers, 'apprentices' of such teachers and authors as Ahmad Ibn Majid. No wonder the navigator was called *mu'allim*, meaning 'teacher', and was ranked higher than 'mere' captain *nakhoda*.

The recorded window on pre-Portuguese Islamic science of Indian Ocean navigation is regrettably small. Ahmad ibn Majid composed his numerous works on the eve of Portuguese arrival in the Indian Ocean.¹¹ By contrast with travel records or academic geography, there is no 'human geography' in the works of

¹⁰ Shumovskii (1957: 71-72) cites the listing from H. Blochmann's translation of 1873.

¹¹ Tibbets (1971: 17-22) provides an annotated list of Ibn Majid's works.

Ahmad ibn Majid. He was a sailor *par excellence*: a navigator who is both pilot and teacher of naval arts, a keen observer of the stars used for steering, with a prodigious memory of currents observed and reefs safely bypassed. After Ahmad Ibn Majid, the number of written sources on the practice of navigation increases slightly in spite of the fact that the Muslim shipping suffered with the arrival of first the Portuguese, then the Dutch and other European seafarers. In 1511, that is shortly after the Portuguese first appeared in the Indian Ocean (and the year they conquered Malacca), a pilot from Shihr named Sulaiman al-Mahri (c. 1480-1550) authored a book titled the *'Umdat al-Mahriya fi dabt al-'ilm al-bahriya* ('The Mahri Pillar for certain knowledge of marine science'). Tibbets finds that it follows the pattern of Ahmad ibn Majid's earlier work, *Hawiya* (1462), from which it borrows, but is less theoretical (Tibbets 1971: 42). On a positive side, Tibbets considers Sulaiman's ability to explain matters superior to that of Ibn Majid, who gets bogged down in detail and is often repetitive (Tibbets 1971: 41-45).

The age when Sulaiman al-Mahri wrote coincided with the Ottoman push into the Indian Ocean. The *'Umda* by Sulaiman, as well as the *Fawa'id*, *Hawiya* and a few other works by Ahmad ibn Majid became raw material for a compilation by the Ottoman commander Sidi Çelebi entitled *al-Muhit*, or 'The Ocean.' The Ottoman fleet sent into the Indian Ocean in 1554 was defeated by the Portuguese fleet and then scattered by a storm which drove Sidi Çelebi's vessel to Gujarat. There he had the Arabic text of *'Umda* translated into Ottoman Turkish with addition of a European section on the Americas (Tibbets 1971: 41-45). Not being a navigator himself, Sidi Çelebi did not add to the knowledge of Indian Ocean navigation. His book closes the chapter of indigenous maritime learning which, although continued on local scale, was soon to be displaced on open seas by the European methods of shipping and navigation.

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