

A Seat at the Table: Addressing Artefact Biases in Asian Shipwreck Assemblages

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Abstract

The ceramic trade throughout Medieval Southeast Asia was prolific. Terrestrial sites have yielded massive amounts of ceramic material and the archaeological reports of shipwreck cargoes corroborate the versatile and extensive qualities of trade ceramics in the region. The sheer quantity of ceramic artefacts found in shipwreck assemblages, paired with a well-researched framework of the aesthetic, show that there is no doubt that we rely heavily on ceramic data to date wrecks and establish regional trading patterns. This paper will debate that we are too 'ceramo-centric' in our analyses of shipwrecks. While ceramics typically represent the bulk of the recovered material in these instances, many other types of media are present in the assemblage. Yet, these "lesser" materials suffer from a lack of investigation and therefore play virtually no role in the archaeological and historical assessment. This case study focuses on the non-ceramic assemblages for six shipwrecks from the fourteenth and fifteenth centuries of Southeast Asia (three Chinese-built and three Southeast Asian-styled junks). The typological study of the metallurgical, organic and geological material from these wrecks can complement much of the work surrounding existing trade models as well as reveal new concepts of crew life, belief systems and culture. These facets come together to offer a more holistic narrative as well as stimulating the need within the region for more study regarding the locations where past peoples mined and manufactured raw metals.

Keywords: Southeast Asia, Ceramics, Metals, Shipwrecks, Trade

Introduction

Shipwreck biographies are primarily described through their ceramic complement. Ceramics make up the bulk of the archaeological material in a shipwreck assemblage, is the material most likely to survive the underwater environment over a long span of time, and, due to the large amount of terrestrial archaeology and historical study of the medium, have become a decent range-dating material as well. These combinations of features contribute very heavily on a shipwreck narrative purely due to its majoritive presence. This angle of research can be misleading since it creates a bias toward ceramic manufacturing and trading centres. Metals and organic material found in such an environment, while more likely to undergo chemical change or even complete

erosion in these circumstances, still have been found in a preserved condition. This paper is an attempt to correct that ceramic bias by highlighting material that not only plays less of a part in the interpretation of the shipwrecks and their cargoes due to its quantified minority; it also plays less of a part due to the objectiveness of the community studying and documenting it. This heavy stress on ceramics in shipwrecks, as it pertains to Southeast and Eastern Asia, lend us to focus our interests on the ceramic centres of these regions, thereby “glossing over” regions that may not have a large ceramic presence, yet assuredly contribute a great deal to the trade both within the region as well as inter-regionally. This case study encompasses the assemblages of six 14th and 15th centuries shipwrecks; three Chinese built junks and three Southeast Asian styled boats to highlight a couple of examples in non-ceramic artefact studies that will hopefully prove the need for increased scholarship on these less fetishized materials. These wrecks have been chosen for specific reasons. Firstly, they are case specific to the appropriate temporal range of the study. This encompasses the formation of the Ming Dynasty; the reign of the Hongwu (洪武) Emperor (1368-1398CE) through a large portion of the Ming Ban up to and including the reign of Emperor Hongzhi (弘治) (1487-1505 CE). They also reflect the wide stretch of



Fig. 1 Shipwrecks in this case study (shown in circle). (Brown 2009: 16)

Southeast Asia (See Fig. 1). The Turiang in Peninsular Malaysia, the Bakau in Indonesia, the Ko Si Chang III and Rang Kwien in the Gulf of Thailand. The Lena Shoal along the Palawan coast and the Santa Cruz in the Lingayen Gulf, both found in the Philippines. These wrecks also represent the diversity of surveyed and excavated practices. The Ko Si Chang III, Rang Kwien, Lena Shoal and Santa Cruz were undertaken by academic departments of archaeology throughout Southeast Asia and Australia, or through cultural heritage schemes

with local museums. The Turiang and Rang Kwien were excavations and surveys conducted by private entrepreneurs in conjunction with academics from the region. Some excavations were salvage operations; others were part of an educational programme. Sites like the Rang Kwien were visited over multiple seasons and used to teach new students methods of underwater excavation and conservation (Intakosai et al., 1983, 1984). The Bakau (Flecker, 2001) and the Turiang (Brown and Sjostrand, 2000) were excavations undertaken by private individuals in conjunction with local academics. However, their respective cargoes were handled differently and ultimately their final destinations reflect dissimilar filtering processes and circumstances. The Turiang assemblage ended up in a ceramic museum and most of the Bakau's assemblage went to a hotel resort. These cases offer a glimpse into the various circumstances surrounding underwater archaeological projects in the area and may give insight into the biases that enter the filtering process both during and after each excavation.

Metallurgical Examples

This lack of existing scholarship on metallurgical material in shipwreck publications in Southeast Asia raise the question of why such artefacts have not been the focus of greater research. The reason may be a matter of aesthetics, corroded metalwork does not have the same intrinsic artistic beauty as ceramics; one of quantitative substance, in that too little metallurgical material survives; one of technological restriction, where scientific methods are not yet sufficiently advanced to glean adequate data; or simply money driven since ceramics are a more, sellable commodity. Metals are difficult to conserve and there is a smaller profit market for it. In the case of each item a combination of explanations exist for the lack of metallurgical research.

Early Ming wrecks

Turiang (1370 CE- 1400 CE)

Large lumps of iron oxide were found strewn about the wreckage. The shape and appearance of these iron lumps imply that this cargo was shipped in a granular form. It is quite common for iron in this form to create a concreted mass when exposed to seawater. In these situations (where iron in powder form was stowed around ceramics and exposed to seawater for a long duration) these concretions occasionally envelop

the ceramics. Similar iron lumps were recovered from the *Royal Nanhai* wreck, alongside traces of flattened bamboo. The existence of flattened bamboo suggests that the iron granules were stored into bamboo bags (Brown and Sjostrand, 2000). These bags not only made decent ballast for the ship, but probably worked rather well as a securing mechanism for more fragile items. In a subaqueous environment the bamboo degraded, and the loose powder filled the gaps of the ceramic material below, leading to ceramic inclusions within the iron masses. No iron in ingot form was recovered from the site.

Rang Kwien (1400 CE - 1430 CE)

Dubbed the “coin wreck”, The Rang Kwien’s major metallic cargo was nearly 200 kilograms of Chinese coins. Some of the coins date from as early as the 4th century yet the majority seem to come from the Hongwu reign (1368-1398 CE). The boat also carried eight copper ingots in its hold. Precious metals off the *Rang Kwien* include two early Ayutthaya-style gold bangles and one gold ring with gems. One bronze gong, one bronze mirror, one bronze bell, three bronze lime pots, as well as fishhooks, bronze harpoons, and hairpins make up part of the assemblage. (Intakosai et al., 1983, 1984). The second training excavation conducted by the Underwater Archaeology Department of Thailand in March of 2013 yielded more metallic cargo; additional copper ingots (totalling eleven) and a miniature bronze tool (E. Vatcharangkul, personal communication, 2013).

Bakau (1410-1430 CE)

In the initial report of the *Bakau* assemblage, the terms that Flecker (2001) used to describe the metallurgical assemblage were vague and unscientific; and he used terms such as “small stack” or, “an array”. An inventory for this wreck was given to me by Angie Liow, curator of the Maritime Experiential Museum in Singapore, which revealed dozens of items from this wreck that were never published (2013). Ten bronze guns were recovered, along with over two hundred Chinese coins from the Yong-Lo period of the Ming Dynasty (1403 CE-1424 CE). Ten bronze mirrors along with eight mirror handles were found, all of which were detached from each other. Six pairs of copper alloy tweezers, one bronze bell, and seventeen bronze gongs were a part of the assemblage, as well as two pewter carafes and one metal kendi. Tin ingots were recovered, along with a myriad of personal and professional copper alloy effects as well:

crew use items include scissors, rings and lamps; hunting effects like fish-hooks and spearheads; metal dining wares like bowls, plates and spoons; as well as scale, net and sounding weights (Flecker, 2001). The partial documentation and recovery of this assemblage reflects one of many problems when dealing with a treasure hunted wreck. The motivations of the excavators in the procurement and the sale of this material while not completely understood, still show a prevalence to promote the more ornate and probably more expensive artefacts of the inventory.

Middle Ming wrecks

Ko Si Chang III (1460 CE – 1487 CE)

Metal objects recovered from this wreck comprised over 2000 lead ingots. Descriptions of the ingots are consistent with lead ingots found in the assemblage of the *Royal Nanhai* (Brown and Sjostrand, 2000) *Pattaya*, and *Ko Si Chang II* (Green et al., 1987) wrecks. Plano-convex shaped copper ingots were part of the metallic assemblage of the Ko Si Chang III as well. Metal personal objects collected from the wreck include one lotus-shaped lead piece, a bronze phallus and a series of bronze lime pots (Green et al., 1987).

Lena Shoal (1488 CE – 1505 CE)

This wreck was found at a depth of ~46 meters and in a less trafficked area, it consequently yielded a diverse and sizeable metallurgical assemblage. Manufactured material such as cast iron bowls, copper repoussé wares and wrought iron needles were part of the cargo situated below deck. Thirty brass spiral bracelets were also part of the trade cargo. Four bronze gongs, Three *Hongwu* reign (1368-1398) coins were catalogued as well as three bronze cannons which was likely part of the ships armament. Raw material commodities of tin ingots and pig iron are also well represented within the assemblage (Goddio et al., 2002).

Santa Cruz (1488 CE – 1505 CE)

Another well-preserved wreck, the *Santa Cruz* yielded even more metallic material than the *Lena Shoal*. The accession inventory for the wreck noted one hundred and seventeen ingots of tin as well as six sheets of copper. Twenty two cast iron bowls were also present. The *Santa Cruz* excavation returned ship-use metallurgical artefacts as

well. One cooking cauldron and one plate were recovered, along with thirteen net weights and three weighing scales. Twelve bronze gongs were found in the cargo hold, along with several brass spiral bracelets. The assemblage contained only three coins. Armaments on the *Santa Cruz* consisted of six bronze cannons. A metal box was catalogued in the assemblage as well. Perhaps most interestingly, the wreck yielded a unique bronze crown (B. Orillaneda, personal communication, 2012). Tables 1 and 2 indicate the presence of metallurgical material in the assemblages throughout this case study. It identifies the specific wreck the material was attributed to, along with the approximate date of each wreck.

Object Narratives

These metal artefacts can be divided into cargo and domestic assemblage. Cargo material can be further subdivided into raw and processed metals. While the assemblage items could have been broken down strictly by element, (i.e. iron items, copper items), such a material-based typology would not have been as thorough as one that considers the use of the objects themselves. The ship reports and excavation collections in this case study have already been conducted. That level of detail contributes to the body of archaeology, but as Muckelroy (1978) states, “It is necessary to go beyond the individual and specific events enshrined in these entities, and look at the maritime culture in which they were embedded”. Using a traditional, “by-material” classification method to analyse this collection would be slightly deficient, specifically when dealing with metallurgical raw material. Any sort of taxonomic study of metals is complicated by the corrosion and recovery process. It is highly probable that metallurgical material excavated in a seawater environment has taken on concretions and/or undergone degeneration to a point which the artefact looks profoundly different than before it sank. There are also few style and sourcing guides for the metallurgical material, particularly in Southeast Asia, which can be unfavourably compared to the ceramic material, where the level of proveniencal detail that archaeologists and historians can attribute to ceramics is phenomenal. Style, form and glazing guides for many of the ceramics present in the assemblages of this case study can pinpoint the exact kiln site, and sometimes date ceramic material to the nearest decade in which it was produced. Terrestrial archaeology has sourced this information for us spectacularly.

Selected examples of metallurgical objects that, when we go into more detail, help contribute to the shipwreck narrative are described below.

Bronze Gongs, Mirrors and Tweezers

Seventeen gongs were found on the *Bakau wreck*, four gongs were recovered from the *Lena Shoal* and twelve from the *Santa Cruz*. The quantities of bronze gongs on the *Bakau* and the *Santa Cruz* lead to the conclusion that these are traded cargo. Though the gongs are fewer in number from the *Lena Shoal*, the archaeological report notes that the gongs were grouped together, this also tends to suggest a cargo item (Goddio, 2002). Bronze mirrors were found on the *Bakau wreck* in substantial quantity (~10). In every case, their numbers are not nearly as prolific as traded ceramics, but in that regard they hold a higher place. It is a specialised commodity, possibly given/sold to only the most discerning of consumers. Isolated instances and detailed documentation of where this material was found may raise the issue that some of these items were not cargo. It is possible that individual bronze gongs on these boats served as part of the ships' equipment or crew possessions. Contemporary ethnographic studies documented the playing of these instruments in sets (three to seven gongs) in certain parts of Indonesia (Nicolas, 2009). However, the methods of playing the gong (or gongs) in East and Southeast Asia varied throughout history; therefore it cannot be assumed that they were played in a set (Nicolas, 2009).

One single mirror was found in the assemblage of the *Rang Kwien* (Intakosai et al., 1983). Found attached to the keel of the boat, it has been suggested that this was a common practice by Chinese sailors to prevent disaster (Elisseeff, 2000). Its role (literally) within the boat, most likely makes this personal property of someone on the vessel. Depending upon where it was found in the keel, it is also plausible that the mirror rig could have been used as a signalling device. More study is needed to understand any mystical or practical connotations of its placement on the *Rang Kwien*. Six sets of bronze tweezers were in the assemblage of the *Bakau* (Flecker 2001). As they were found together during the excavation, it is assumed that they were a trade commodity (Flecker, 2001). More of these may have been in the cargo, but their small size could have made them both hard to find, and/or hard to survive the oceanic environment. An item like this represents a highly valued object, much like the bronze

mirrors found within the assemblage. These two artefact types pair well together. A mirror would be necessary if a user desired to preen with a pair of tweezers. If we treat these objects (mirrors and tweezers) as a “set” of artefacts, they could promote discussion about concepts of grooming and vanity during this age, as well as debate on the cultural transfers on ideas of beauty and the exotic (Morrison, 2013).

Tin Ingots

Tin ingots were found on the *Bakau* (A. Liow, personal communication, 2013), *Lena Shoal* (Goddio, 2002) and the *Santa Cruz* (Orillaneda, n.d) wrecks. Two ingots were recovered from the *Bakau*, while the *Lena* and the *Santa Cruz* yielded over a hundred ingots each. They are all in the shape of a truncated pyramid. The tin ingots on the *Bakau* were not mentioned in Flecker’s (2001) article.

Ship Use/Personal Metal Wares

Quantification methods were used as the criteria to delineate personal material/ship use material versus material onboard for trading purposes. Isolated items and groups of item tallying less than three were assumed to be individually owned or ship property, while items that comprised of four or more were identified as trade material. Nautical themed artefacts (e.g., net weights and sounding weights, fishhooks, and cannons) are catalogued as ship use material regardless of inventory amounts. Individual high-end artefacts (e.g., jewellery, crown) are treated as either personal use or tribute wares. These criteria are also dependent upon the information gained regarding each ship excavation. If any of the isolated finds can accurately be provenanced in the respective cargo hold, then it shall be noted and deemed a trade good or tribute item.

Spearpoint

Of the six wrecks cited, only one spearhead was found on the *Bakau* wreck (Flecker, 2001). This can mean many things. It is possible that close quarter weapons were not perceived as needed on journeys such as these or simply that the spearheads (and the wooden hafts they were attached to) did not survive the long term immersion in seawater. Due to the lack of similar material on other wrecks, this was most likely not commonly used as a tool for fishing. Yet if the possibility of pirate invasion was real and cannons were a viable deterrent for such a scenario, I would beg the question that a

boarding prevention plan would be in place and would facilitate the need for close quarter weapons like swords, knives and spears.

Lamps

A single metallic lamp was recorded in the assemblage of the *Santa Cruz* (B. Orillaneda, personal communication, 2012). Little is known about shipboard practices of lighting a boat at night. If lamps were commonly used in this capacity then they would most likely be a part of other shipwreck assemblages. There is, however, a lack of this type of artefact in shipwreck inventories of the same period. This may be another factor of the impact of the environment on the material or simply that other types of lighting implements are used.

Conclusion

Depending upon the author, the non-ceramic assemblage material in many archaeological reports and catalogues is summed up in a few paragraphs, and in some cases, merely one sentence. Some material found in the assemblages of this study was not even mentioned in the published material. This reflects the degree to which this material is considered when understanding the shipwreck narrative. The manner in which this material is highlighted mimic Brown's (2009) catalogue on the chronology of Thai trade wares. Her goal was to group fourteenth and fifteenth century shipwrecks and glean their ceramic cargo in order to ascertain the presence (or absence) of cultural ceramic material (i.e. Chinese blue-and-white, Thai celadon, Vietnamese wares) and whether or not it corroborates with a ban on overseas trade during that time. Using this system of dated shipwrecks, an attempt was made to glean the metallurgical objects from the assemblages and reflect on any overlapping features of this material; both in terms of trading patterns and in terms of what possible cultural significances these objects signify. This contribution is valuable to the larger archaeological community because it is a start to a higher level of interpretation on material that has been largely neglected.

The ships in this study yielded a wide variety of metallurgical artefacts. Metals, whether as raw materials or a finished trade good, were clearly a regular complementary part of the cargoes of trading vessels in fifteenth century Southeast Asia. In Table 2, we see a

widespread increase in the trade of metallurgical raw materials. The iron granules carried by the *Turiang* were an isolated instance in this study. The copper ingots on the *Rang Kwien* and the *Ko Si Chang III* show an increased trade in the material but little could be ascertained as to its intended market. Since the *Ko Si Chang III* is the smallest boat in the study, it was most likely a local trading vessel. It could suggest a regional popularity for the material on the boat, or a boat bound for a larger emporia. The tin ingots from the *Bakau*, the *Lena Shoal* and the *Santa Cruz* clearly show the increased trading practice of this material. The few ingots found on the *Bakau* could reflect a sample of a new product while the nearly one hundred ingots found on each of the *Lena Shoal* and the *Santa Cruz* wrecks represent a stark increase in the trade of this raw material.

This study of this type of material highlights some of the problems researchers encounter with modern maritime archaeology. Even in perfect conditions, archaeologists cannot assume to recover all of the material. Most of the metals undergo a physical transformation in seawater to some degree; it ranges from mild tarnish to complete disintegration. Due to this natural transformation, artefact inventories of this type of material will be lower. The corrosion of this type of material will result in the removal of some objects from the archaeological record. However we also need to understand the academic, economic and corporate environments and the motivations that surround these wrecks as well. Not all wrecks are excavated in the same manner, and the collection, selection and relation strategies will result in different kinds of shipwreck assemblages. Without being able to properly observe and document each excavation from beginning to end, we can only question the motivations behind each excavator pertaining to what material may have been purposefully overlooked or recovered. We have five shipwrecks excavated by different entities. Material that was possibly left in situ on the *Bakau* wreck might have been due to aesthetic reasons or monetary ones. An academic entity may have handled the excavation and material differently. Reciprocally, the excavations of the *Santa Cruz* and *Lena Shoal*, managed by the Frank Goddio and the HILTI Foundation, would have been different if managed by a firm like Seabed Explorations. The point here is that underwater archaeologists may use similar methods of extraction and conservation to bring an assemblage to the

surface, but because of the different motivations and ambitions of the excavator involved on each wreck, we can only compare the assemblages with each wreck with a small degree of certainty and for commodities such as pottery rather than for metals. While these examples highlighted in this paper are all metallurgical in nature, they are not the only artefacts that suffer from this bias. This case study has also revealed various examples of organic material and stone-carved utility objects that experience the same representational deficiency in the underwater archaeological narrative. A similar presence/absence model of organic material found in ceramic containers in shipwreck assemblages can reflect trading patterns of material that otherwise has simply been cited in written sources.

			Bronze Material						Personal Effects			Iron Pots	Copper Repoussé
Shipwreck	Date	Coins	Gongs	Mirrors	Bell	Guns/ cannons	Spearheads	Limepots	Fishhooks/ Weights	Jewelry	Misc.		
Turiang	1370-1400CE												
Rang Kwien	1400-1430CE	x	x	x	x	x		x	x	x	x		
Bakau	1410-1430 CE	x	x	x	x	x	x				x	x	
Ko Si Chang III	1460-1487CE							x			x		
Lena Shoal	1490-1505CE	x	x			x					x	x	x
Santa Cruz	1490-1505CE	x	x			x				x	x	x	

Table 1. Manufactured Metals in shipwrecks.

Shipwreck	Date	Tin Ingots	Lead Ingots	Iron Ingots	Copper Ingots	Iron Granules	Copper Sheeting
Turiang	1370-1400CE					x	
Rang Kwien	1400-1430CE				x		
Bakau	1410-1430 CE	x					
Ko Si Chang III	1460-1487CE		x		x		
Lena Shoal	1490-1505CE	x		x			
Santa Cruz	1490-1505CE	x	x	x			x

Table 2. Raw Materials on Shipwrecks.

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References

- Brown, R. M., and Sten Sjostrand., 2000. *Turiang: A Fourteenth – Century Shipwreck in Southeast Asian Waters*. Pacific Asia Museum, California.
- Brown, R. M., 2009. *The Ming Gap and Shipwreck Ceramics in Southeast Asia: Towards a Chronology of Thai Trade Ware*. Siam Society, Bangkok.
- Elisseeff, V., (Ed.), 2000. *The Silk Roads: Highways of Culture and Commerce*. Berghahn Books, Oxford.
- Flecker, Michael., 2001. The Bakau Wreck: An Early Example of Chinese Shipping in Southeast Asia. *International Journal of Nautical Archaeology*, Vol. 30 (2): 221–30.
- Goddio, F., Monique, C., Peter, L., Stacey, P., and Rosemary, S., 2002. *Lost at Sea: The Strange Route of the Lena Shoal Junk*. Periplus Publishing, London.
- Green, J., Harper, R., and Intakosi, V., 1987. The Ko Si Chang III shipwreck excavation 1986. In *The Maritime Archaeology of Shipwrecks and Ceramics in Southeast Asia*. Special Publication No. 4, Australian Institute for Maritime Archaeology, Fremantle: 39-79.
- Intakosai, V., 1983. Rang Kwien and Samed Ngam Shipwrecks. *SPAFA Digest: Journal of SEAMEO Project in Archaeology and Fine Arts*, Vol. 4 (2): 30–34.
- Intakosai, V., 1984. The Excavations of wreck sites in the Gulf of Thailand. In *Final Report Consultative Workshop on Research on Maritime Shipping and Trade Networks in Southeast Asia, I-W7, Cisarua, West Java, Indonesia, November 20-27, 1984*. SPAFA Co-ordinating Unit, Bangkok: 133-143.
- Morrison, W. A., 2013. A Fresh Eye on Familiar Objects: Rethinking Toiletry Sets in Roman Britain. *Oxford Journal of Archaeology*, Vol. 32 (2): 221–30.
- Muckelroy, K., 1978. *Maritime Archaeology. New Studies in Archaeology*. Cambridge University Press, Cambridge.
- Nicolas, A., 2009. Gongs, Bells, and Cymbals: The Archaeological Record in Maritime Asia from the Ninth to the Seventeenth Centuries. *Yearbook for Traditional Music*, Vol. 41: 62-93.

Biography

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