

Long distance Arab shipping in the 9th century Indian Ocean: recent shipwreck evidence from Southeast Asia

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The present article examines two of the earliest shipwrecks and their cargoes belonging to long distance trade recovered in Southeast Asia as a key to understanding the radical changes that were taking place in the Indian Ocean around the beginning of the 9th century CE. The *Belitung* (Tang) shipwreck was reported in 1998, in the western Java Sea. In 2014, a second Arab dhow was discovered, in the saturated landscape of reclaimed mangrove on the northern shore of the Gulf of Thailand. Both proved to be of seminal importance: the Belitung cargo consisted of the largest assemblage of late Tang era artefacts ever recovered, whilst the *Phanom Surin* shipwreck revealed the first finding of Gulf storage jars in Southeast Asia, and the first Pallavi inscription recorded from the region. These are the only securely recorded instances of medieval ships of West Asian design and probable origin being recovered archaeologically in Southeast Asia.

Keywords: Arab dhow, *Belitung*, Pahlavi inscription, *Phanom Surin*, Srivijaya.

Introduction

HERE we examine two shipwrecks recovered in the last 20 years, one in the western Java Sea in 1998, the other in the Gulf of Thailand in 2013. These are known as the *Belitung* (Tang) and *Phanom Surin* shipwrecks respectively. Both proved to be large ocean sailing hardwood timber vessels of stitched hull construction, identifying them as dhows, belonging to the Arab ship building tradition (Figure 1). Both employ hardwoods for their hulls and masts, and softwoods for replaceable decking and fittings. The softwood elements, and the stitching of the hull's timbers, would have demanded regular refreshment, especially for vessels spending time in tropical waters. In the case of the *Belitung*, located in the warm waters of the Java Sea, only the major timbers survive, whilst *Phanom Surin* was lodged in saturated mangrove silt which has provided an oxygen-free environment ensuring that much of the original coir stitching has survived, along with rigging ropes and other organic mate-

rial (Figure 2). Both vessels contained evidence of cargo indicative of long-distance trade that linked them to both the Persian Gulf and south China^{1,2}.

The evidence proffered by these two shipwrecks and their cargoes is of utmost importance for our understanding of long distance maritime trade and Asian exchange systems in the wider Indian Ocean world in the later first millennium CE. At last we are able to demonstrate archaeologically what the Arab and Persian geographers and travel commentators wrote of in this period: direct trade between the Abbasid ports in the Gulf and those of south China. Further, two ship's cargoes provide a unique opportunity to understand in a more nuanced way the nature of this exchange system. To focus specifically on the less than a half century in which these two shipwrecks were operating, in my view, from the late 8th to second quarter of the 9th century CE, we have startling new evidence for the exponential expansion of commodity trade. In the case of China, this is the industrialization, on a scale not witnessed before, of the production of glazed ceramics for export market.

The *Belitung* shipwreck was first reported by Indonesian fishermen in shallow waters offshore from Belitung Island, near Bangka, in the western Java Sea in 1998. It has been widely reported and more recently has been the subject of two exhibitions³. Then, in 2013, a second Arab dhow was discovered, in the saturated landscape of reclaimed mangrove on the northern shore of the Gulf of Thailand⁴. These are the only securely recorded instances of medieval ships of West Asian design and probable origin being recovered archaeologically in Southeast Asia.

Prior to the discovery of these two vessels, we already had a rich literature that chronicled that trade and described the routes navigated. These sources, principally in Arabic and Persian, provide the earliest written descriptions of the journey to be undertaken by sea from ports of the Persian Gulf to those of southern China. Arabic sources of the mid-9th to mid-10th century CE make clear that the dominant mercantile presence in this burgeoning trade was from the gulf region. The Arab Baghdadi geographer Mas'udi (d. 956) summed up much of this in his *Muru'j adh-dhahab wa ma'adin al-jawhar* ('meadows of gold and mines of gems') knowledge, but two mid-9th

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century works upon which he drew, Ibn Khurdadhbih's *Kitab al-Masalik* ('The Book of Roads and Kingdoms' of 846-), and the *Akbar al-Sin wa'l-Hind* of 851, bring us within decades of the date of the *Belitung* cargo⁵. They unequivocally confirm the leading role that Gulf and



Figure 1. Arab dhow in a distressed state; from an illustrated edition of al-Harīrīs *Maqāmāt*, Undated. 13th century. Folio 26.5 × 20 cm. (Institute of Oriental Manuscripts – Russian Academy of Sciences, Saint Petersburg).



Figure 2. The Phanom Surin shipwreck excavation, 2014, Samut Sakhon Province, Gulf of Thailand (Fine Arts Department, Bangkok).

Indian traders assumed in south China in the 8th to 9th centuries CE (ref. 6). These writers were informed principally by their direct experience of the Persian Gulf trade at such major terminals of Basra (Iraq) and Siraf (Iran). These are the fullest accounts known of this trade in the decades surrounding the *Belitung* and *Phanom Surin* shipwrecks.

The *Belitung* shipwreck was the first Arab dhow to be discovered in Southeast Asia, and found fully laden with a cargo in excess of 65,000 Chinese artefacts, the vast majority of which, some 57,500, were the painted glazed stone wares of the Changsha kilns⁷. A number of other kilns across southern China supplied glazed ceramics that ended up forming components of this cargo. The ceramics were consigned from the various production centres to a major coastal port, likely Hangzhou, the southern terminus for the Grand Canal and nearby Ningbo, the great international port of the Tang era, both in Zhejiang province, and shipped down the coast to Guangzhou, where they were apparently consolidated into the final cargo, as witnessed by many of the smaller Henan wares being packed into Guangdong storage jars for safe passage. This practice was observed later by the Northern Song commentator Zhu Yu in his *Pingzhou ketan* (1116 CE), where he described the small wares closely stacked inside the larger, so not a crevice remained⁸. The sheer volume of this cargo points to the industrial scale of production being undertaken by the second quarter of the 9th century CE, a new plateau in the commercialization of southern China's ceramic industry under the stimulus of foreign markets. From Guangzhou, the *Belitung* commenced the first leg of its journey southward, with its first major destination being Srivijaya (Sanfoqi/Shilifoshi), in south-eastern Sumatra, the premier entrepot for international trade in the 9th century CE Southeast Asia. Srivijaya's equatorial location ensured that it was, as described in the early 12th century CE *Pingzhou ketan*, 'the centrifugal point of long distance trading'⁹. From there it would likely have intended to proceed via the Straits of Melaka to the Bay of Bengal, with Sri Lanka as the next landfall, before proceeding into the Arabian Sea and the Persian Gulf. Upon entering the western Java Sea, the vessel appears to have been blown off-course and swamped in shallow waters off shore from Belitung Island. As the *Belitung* ship and its cargo has been the subject of extensive study over the past twenty years, I will concentrate the remainder of this paper on the newly discovered *Phanom Surin* shipwreck.

The *Phanom Surin* shipwreck was largely devoid of cargo when excavated. It presumably had already off-loaded its cargo, or was carrying perishable goods of which no trace has been detected. Unlike *Belitung*, the *Phanom Surin* vessel lacks any securely dated artefact, but a provisional dating can be proposed. The ceramic typologies are the foremost dating tool, and represent three distinct traditions, Chinese, Mon and West Asian,

all of which can be broadly assigned to 8th to 9th century CE timeframe¹⁰. This dating can be further refined by the initial series of radiocarbon results, which reportedly place the timbers and fibres in the 7th to 10th century CE window, but which can most comfortably be assigned to the mid to late 8th century CE. The location is sited between the Tha Chin and Chao Phrya river deltas, some 8 km from the present-day shoreline in Samut Sakhon Province on the Gulf of Thailand. As the archaeological context indicates a marine environment, this location can be taken as a reliable indicator of the rate of coastal expansion over the 1100+ years since the vessel was lost at sea¹¹. The site has been the subject of two excavations to date, in 2014 and 2015 (ref. 12). The hull is stitched, the planks drilled at the edges to allow binding together with fibre cord and with the addition of wadding to seal the joints (Figure 3). These features allow a secure identification of the ship's architecture as that of an Arab dhow. A fully rigged Arab dhow employed on the India trade is faithfully depicted in two known 13th century editions of the *Muqamat al-Hirani* manuscript painting, one dated to 1237 CE (Figure 1). It clearly depicts the stitched hull construction, stern rudder, lateen-rigged sail and composite grapnel anchor, all features of the medieval dhow. The surviving elements of the *Phanom Surin* vessel corresponds to this depiction; the keelson exceeds 17.67 m and one of the two deck masts recovered stands at 17.35 m, indicating a vessel of similar scale; the keel has not yet been located. Numerous planking timbers have been recovered, along with ropes and fibres associated with hull stitching, corking and rigging, well preserved in the saturated coastal landscape.

That the recovered ceramics are from three sources spanning from the Gulf to southern China, signals the reach of this vessel's trade network. The Chinese wares are represented by storage jars likely from the Guanchong kilns of Guangdong, and unglazed brown stoneware jars with six lug handles, associated by Thai researchers with the Fengkai kilns of Guangdong Province. These types of



Figure 3. Stitching of planks. The *Phanom Surin* shipwreck excavation, 2014, Samut Sakhon Province, Gulf of Thailand (Fine Arts Department, Bangkok).

Yue-glazed stoneware jars (Dusan-type), vertical sided with a flat base and four or six small lugs beneath the everted rim, are ubiquitous throughout sites in the Indian Ocean, and are the first Chinese ware to archaeologically mark the trading routes¹³. Their widespread presence at Persian Gulf sites, such as Rishabhr, Bibi Khatun and Tal-i Sabz, confirms that these Chinese wares were produced to serve the needs of long distance traders, including those of West Asia. They have also been reported at the Arabian Sea port of Banbhore (Pakistan), and in Sri Lanka. Jars with 'pseudo-Arabic' inscriptions on the shoulder have been found at sites extending from Siraf (coastal Iran) to Palembang (Sumatra) and Central Java¹⁴.

A unique insight into the globalization of the supply of materials employed in the construction and servicing of ships engaged in the Indian Ocean trade can be gained from the surviving ships vessels. A late Tang dynasty source, the *Ling biao lu yi* (strange things noted in the south), broadly contemporary with the *Phanom Surin* shipwreck, describe the ships of the foreign merchants as not using iron nails to secure their hull, but rather 'their (planks) are strapped together with the fibre of coir-palms. All seams are caulked with an olive paste'¹⁵. This commentator is describing the Arab dhow, the antiquity of which is confirmed by the *Periplus of the Erythraean Sea*, c. 40–50 CE, which identifies Oman as an important supplier of a type of sewn boat to southern Arabia, likely the dhow's ancestor¹⁶.

The origin of the *Phanom Surin*'s hull timbers await confirmation, but those of the related *Belitung* (Tang) shipwreck have proved to be East African hardwood (mahogany), such as would have been widely used by the ship builders of the Arabian Peninsula¹⁷. It is probable that ships constructed on the same Arab ship architecture principles were built on the south-western coast of India, taking advantage of the abundant sources of hardwoods. In both shipwrecks, evidence of on-journey maintenance and repairs is seen in the presence of Southeast Asian woods in upper decking, and in the necessary refreshing of cords and sealants in the hull. A detailed account of the processing of the cord employed in the assembly of the Arab dhow is given by the early 14th century CE Moroccan traveller Ibn Battuta (1304–69 CE). In his description of economic activity in the Maldives, he singles out *qandar*, coconut fibre cord, for special attention. After processing, Battuta informs us that the fibre was spun and then woven into cord 'for the sewing (the planks of) boats together. These cords are exported to India, China and Yemen, and are better than hemp'. He then succinctly describes the merits of the dhow's unique construction and its resulting resilience: 'The Indian and Yemenite ships are sewn together with them, for the Indian Ocean is full of reefs, and if a ship is nailed with iron nails, it breaks up on striking the rocks, whereas if it is sewn together with cords, it is given a certain resilience and does not fall to pieces.'¹⁸

The presence of two types of Persian Gulf ceramics on *Phanom Surin* are of the upmost importance. One is a turquoise glazed double-handled jars, such has been reported from port and habitation sites along the Indian Ocean sea lanes (Figure 4). Its presence alongside known Guangdong glazed stoneware jars allows a dating context. Variants of this type of ware were recovered from the Belitung cargo and from the Chau Tan wreck site in coastal Vietnam¹⁹. The second type of Gulf ceramic recovered is the first recorded appearance of Persian Gulf torpedo jars east of the Indian subcontinent (Figure 5). Fragmentary remains of nine wide mouthed cylindrical storage jars with pointed bases have been recovered to date. They typically measure 70–80 cm in height, and 45–50 cm in diameter, and are bitumen sealed on the interior²⁰. Torpedo jars are widely recorded at West Asian sites, including the Great Mosque foundation excavation at Siraf (pre- 803/4), and from Bushehr in southern Iran, a Sasanian period port largely abandoned in the Early Islamic period²¹. Jars of similar dimensions to those of the *Phanom Surin* cargo were excavated in 1913 by Ernst Herzfeld from the residence of the Caliphal palace complex of *Dar Al-Amma* at Samarra, built in 836 CE by Al-Mu'tasim, where they likely served as wine containers

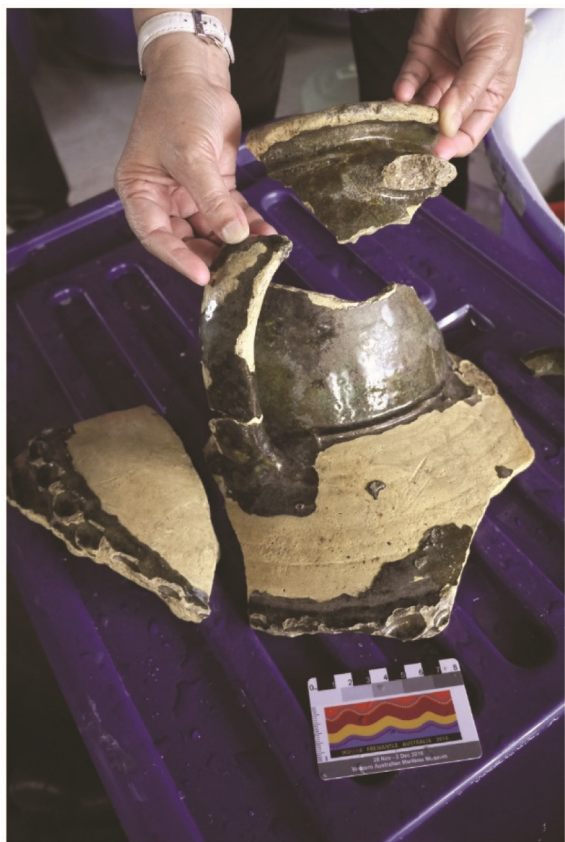


Figure 4. Turquoise glazed double-handled storage jar, Phanom Surin shipwreck excavation, 2014, Samut Sakhon Province, Gulf of Thailand, Persian Gulf, 8th century glazed earthenware (Fine Arts Department, John Guy).

in a private quarter²². Further, torpedo jars have recently been reported from Swahili coastal settlements on Zanzibar Island, Tanzania, East Africa, in a secure 8th century CE context²³. The Unguja Ukuu trading settlement site on Zanzibar island, which has the remains of a mosque dating from this period, was first dated by a hoard of gold Abbasid dinars issued in Baghdad in 798–99 CE (ref. 24).


Gulf torpedo jars circulated in the Indian Ocean trading system as containers, not as commodities, and thus could be expected to have circulated widely before exhausting their utility. They were routinely sealed on the interior with a bitumen, to ensure they could carry liquids when required. A late 5th century CE mural at the Buddhist rock-cut site of Ajanta, Cave no. 2, in western India, provides what may be the earliest depiction of this jar type in a maritime context. The mural depicts a triple-masted ocean sailing vessel with wide-mouthed jars stacked edge to edge (supporting each other) on the stern deck (Figure 6). This is a unique ‘ship portrait’ from this time, and could well be depicting this type of ‘handle less amphora’ which had emerged in the Persian Gulf world as a general purpose shipping container.

This ceramic type has been linked petrographically to clay bodies associated with the kilns at Basra, Iraq²⁰. The ubiquitous presence of these turquoise wares across the long distance trade routes, from Basra to south China, signals the pivotal role that Basra has assumed by the 9th century as the premier port of the Abbasid capital Baghdad, and in the period 836 to 892 CE, Samarra, linking the



Figure 5. ‘Torpedo’ storage jar, Phanom Surin shipwreck excavation, 2014, Samut Sakhon Province, Gulf of Thailand, Persian Gulf, 8th century earthenware (Fine Arts Department, John Guy).

sea routes to those of the caravansaries. *Phanom Surin* belongs to this period of expansion in long distance Asian trade, and its presence in the Gulf of Thailand, suggests that West Asian merchant participation in this trade was a far more pervasive phenomenon than formerly recognized.

A fragment of one of the torpedo jars aboard *Phanom Surin* has an inscription, chiselled into the fired body that potentially transforms our understanding of the site and its significance (Figures 7 and 8). Professor Prods Oktor Skjærvø of Harvard University has identified the inscription as being in Pahlavi, the Middle Persian language of Iran (pers. commun., 2016). The language, and its script, appears to have had an afterlife of several centuries beyond the Sasanian period, judging by its persistent use in commercial transactions amongst Iranian communities engaged in international trade. Skjærvø's reading and commentary is here given in full: 'The inscription is written very clearly in a regular late Pahlavi ductus and reads <y'tbwcyt'>, i.e. Yazd-bōzēd, which in regular Pahlavi would be . This is a proper name, the literal

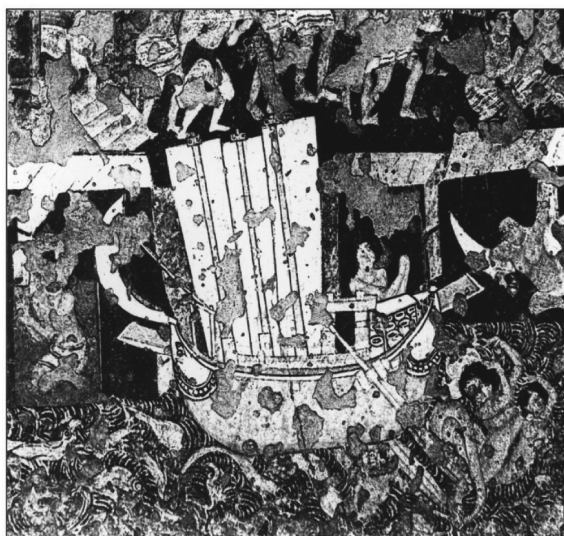


Figure 6. Mural painting depicting a sixth-century ocean-sailing ship, with open-necked jars at stem. Ajanta, Cave 2, Maharashtra, western India, 5th century (Archaeological Survey of India).

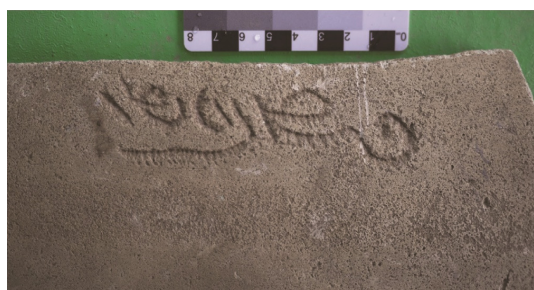



Figure 7. Inscribed ceramic fragment written in regular Pahlavi language and script, reading Yazd-bōzēd, a proper name presumably identifying ownership. *Phanom Surin* shipwreck excavation, 2014, Samut Sakhon Province, Gulf of Thailand, Persian Gulf, 8th century earthenware (Fine Arts Department, John Guy).

meaning of which is 'god delivers' (or 'god saves'). It is written as one word and without the 'final stroke' after the first component as we would expect if it were a phrase: <y't' bwcyt'> . Proper names ending in bōzēd 'delivers' are well attested, e.g. Mihr-bōzēd 'Mihr delivers' and Ādur-bōzēd 'the Fire delivers' on seals, and Kay-Ādur-bōzēd is the name of a famous Zoroastrian commentator from the Sasanian period²⁵. 'Yazd-bōzēd' is the name of a person, presumably a merchant aboard the ship, or the owner of the jars carried on the ship. Irrespective, we can be confident that he was an Iranian, and from the form of the name, that he was a Zoroastrian.

The presence of a Persian Gulf stoneware vessel with a Pahlavi inscription aboard an Arab dhow in late first millennium CE Southeast Asian waters opens up wider discussion of the role of foreign merchants in 9th century CE maritime Asia. Pahlavi inscriptions outside Iran are rare. A Pahlavi-Chinese bilingual inscription is known from a tomb excavated in Tuman, Xi'an, Shaanxi Province, northwest China. It is dated 874 CE and marked the burial of a woman of the House of Ma, a translation of a Persian name Mahanos²⁶. Persians were an important minority in the émigré communities of Tang China, enterprising traders many of whom settled in China, securing high rank and social position. The *Phanom Surin* inscription adds another dimension to our understanding of this, those who engaged with China through the southern ports.

Pahlavi inscriptions are also known from western India in the later 9th century CE, from sites extending from Kanheri in the north to Quilon (Kollam) in the south. The Buddhist rock-cut monastic complex at Kanheri, now in the northern suburbs of Mumbai, has, in Cave no. XX, three rock-cut inscriptions left by Pahlavi-speaking donors²⁷. Two of these are dated to the early 11th century CE (ref. 28). The donors must be assumed to have been Persian traders settled in the northern Konkan coastal region of Maharashtra, perhaps presenting themselves as Buddhist converts. The Quilon (Kollam) copper plate inscriptions of Kerala are more compelling evidence for the present discussion, as they date to the 880 CE, less than a century later than the assigned date of the *Phanom Surin* shipwreck and less than fifty years after the *Belitung* (823 or soon after). The Quilon copper-plate inscription records a business agreement between a local Malayalam ruler and foreign merchants, extending to the latter the privileges of trade. The grant is written in Tamil, and witnessed with names written in Arabic, Pahlavi and

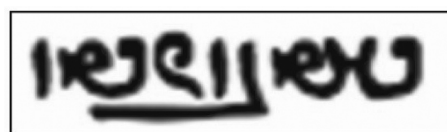


Figure 8. Transcription of Pahlavi inscription reading Yazd-bōzēd. *Phanom Surin* shipwreck excavation, 2014, Samut Sakhon Province, Gulf of Thailand, Persian Gulf, 8th century earthenware (Oktor Skjærvø).

Judaeo-Persian²⁹. This record of a Pahlavi speaking Iranian merchant community operating under state privileges on the Malabar coast of south-west India in a similar timeframe to *Phanom Surin* and *Belitung* ships confirms the wider network in which these shipwreck discoveries must be viewed. That Pahlavi inscriptions dated to the early 11th century CE appear at the Kanheri Buddhist rock-cut monastery complex underscores both the persistence of the use of Pahlavi amongst Iranian mercantile communities in western India and the ongoing nature of these trading activities.

Whilst *Belitung* and *Phanom Surin* ships were working a trade route that extended from the Persian Gulf to Southeast Asia and southern China, both undoubtedly engaged in local trade enroute. It probably had made a port call to the major entrepot of its day in equatorial Southeast Asia, Srivijaya, located first at Palembang on the Musi River estuary and was heading for Java, a major market. It may have been intending to make landfall on the north coast of Java, to trade with the prosperous Sailendra dynasty of Central Java. Judging from its distinctive cargo however, there can be little doubt that its final intended destination was the Persian Gulf³⁰. *Phanom Surin* presents a clearer story, and adds a valuable dimension to our understanding of the activities of long distance traders. This vessel was also working a trade route that extended from the Persian Gulf to Southeast Asia and southern China. However, the wreck site is not located on the known long distance routes, but rather in coastal lower central Thailand. From there, the merchants aboard could readily access several major urban Mon centres (*muang*) flourishing in this period. The most

immediately accessible was Nakhon Pathom, a large moated urban centre that marks a mature phase of early urbanization in mainland Southeast Asia³¹. The shipwreck site is strategically located between the Tha Chin and Chao Phraya rivers, the two most important river systems of Central Thailand. The Tha Chin provides the ancient Mon cities of Petchaburi, Kua Bua, Ratchaburi, Nakhon Pathom and Pong Tuek with access to the Gulf and hence to international trade. The Chao Phraya connects numerous other centres, including Lopburi, U Thong and, via the Pa Sak tributary, Si Thep.

Each of these urban centres likely served as regional capitals in their respective spheres of influence. To the east and connected via the river systems flowing from the Mekong, are such important early urban centres as Dong Si Mahasot – Prachinburi, where Gulf turquoise jars have been reported³². The presence of western merchants at Nakhon Pathom and at other urban centres of the later first millennium CE has long been surmised on the basis of terracotta stupa décor depicting foreigners (Figure 9). Their resemblance to those painted in the murals at Ajanta Cave 1 in western India in the mid-5th century CE is striking (Figure 10).

The *Phanom Surin* ship was engaged in regional trading networks of which we had almost no prior knowledge, supplying international goods to local elite markets and sourcing local products. Up until this shipwreck's discovery, inter- and intra-regional trade has been associated with Southeast Asian ships displaying a different ship building tradition, as witnessed by the 10th century Cirebon and Intan shipwrecks in the Java Sea, both vessels of local origin engaged in the secondary distribution of international goods^{33,34}. The Malay ship building tradition is characterized by the edge-to-edge pegged and stitched hull construction with internal lashed lug tension bracing, as opposed to the Arab tradition which is essentially an edge-to-edge stitched and corked assembly. Such international trade was no doubt a significant factor in the growth and prosperity of the early urban centres and emerging polities of Southeast Asia.



Figure 9. Graffiti-caricature of a West Asian merchant, inscribed on a building brick, Chedi Chula Pathon, Nakhon Pathom, Central Thailand, early 8th century, Phra Pathom Chedi National Museum, Nakhon Pathom (609/2519). (Fine Arts Department, Bangkok).



Figure 10. Drinking scene depicting Iranian merchants: Ajanta Cave 1, 5th century, Maharashtra, western India (Archaeological Survey of India).

The *Belitung* and *Phanom Surin* shipwreck discoveries mark a turning point in our understanding of international trade and cultural exchange in the late first millennium CE Indian Ocean. They witness the emergence of West Asian market-orientated Chinese production, further evidence of the Persian-Arab domination of the early commercialization of China's international ceramic trade, well underway by the second quarter of the 9th century CE. Together they redefine our understanding of global exchange at the beginning of what may be termed the first era of globalization.

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