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Heritage of the Maritime Silk Route: Wrecks of Asian Traders and Ports

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The archaeological remnants of coastal ports and shipwrecks serve as invaluable heritage sites that provide profound insights into historical maritime activities conducted by humans. Cross-regional voyages occurred as early as the beginning of the first millennium, aided by the increasing knowledge of the monsoons. Along with expanding intra- and inter-sailing routes, the improved seaworthiness of vessels facilitated the movement of people and seaborne commodities. The names of the Indic, Kunlun, and Persian ships appear in various historical accounts written in the latter half of the first millennium, and the structural details and characteristics can be physically examined by looking at shipwrecks. Southeast and East Asian shipwrecks from the eighth to the fourteenth century provide a perspective on the dynamism of types of seagoing ships involved in long-distance trade. By examining the remnants of cargo being transported by these ships, we begin to understand how the system of cross-regional shipment of heavy and bulky items, metal objects, fragrant woods, glass, and ceramics sustained and impacted the religions, societies, culture, and regional economies. Furthermore, it helps define the Maritime Silk Route heritage to be managed and protected. As such, this paper gives the archaeological evidence of port ruins and wrecks and also introduces, as an example, a case from Central Vietnam.

Keywords: Maritime Silk Route heritage, maritime archaeology, shipwrecks, ports, seaborne commodities

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Introduction

The Maritime Silk Route, an extensive network of historical maritime trade routes, profoundly propelled the long distance movement of goods and human and sustained cultural exchanges and socio-economical develpments. This paper presents the archaeological study of the Maritime Silk Route, revealing the rich heritage of this iconic route. Archaeological remnants of coastal ports and shipwrecks, alongside recovered shipments from Southeast and East Asian wreck sites, serve as compelling evidence of maritime transport's pivotal role from the eighth to the fourteenth centuries.

Through examination of wreck sites and excavated materials, this paper attempts to unravel the historical narrative of maritime transport, in particular shedding light on diverse types of seagoing vessels engagaed on the long-distance trades. Additionally, it illustrates people in the past maritime space, emphasizing the significance of maritime transport during this period. Emphasizing the importance of ongoing maritime archaeological research, this paper aims to deepen our understanding of the broader trade activities along the Maritime Silk Routes. Through this study, my goal is to clarify the universal value of the archaeological heritage of the Maritime Silk Routes and its enduring impact on human history.

Knowledge of Seasonal Monsoon Winds and Seafaring

Developing knowledge of the seasonal patterns of monsoons and the ocean and wind-driven currents has facilitated cross-regional seafaring. The *Periplus of the Erythranean Sea* indicates the patterns of offshore and onshore sailing using such knowledge. There was a significant improvement in the sharing and understanding of seasonal monsoons in the Arabian Sea by the beginning of the first millennium. This facilitated cross-regional voyages connecting the eastern Mediterranean to the western coasts of the Indian subcontinent. A local trading ship, like the *Godawaya Ship,* investigated by Sri Lankan underwater archaeologists*,* was commonly used for intra-regional sailing (Muthucumarana et al. 2014). This small trading vessel was lost around the first century BCE to the second century CE off the southern coast of Sri Lanka, and, as explained below, the raw glass was one of the commodities on board.

Understanding seasonal monsoons propelled not only the development of offshore sailing routes but also the connectivity of terrestrial and maritime trading corridors. The seasonal monsoons in the Indian Ocean helped bring together both caravans using the land roads and seafarers using the maritime routes (Yajima 1993). The Indian Ocean World (IOW) geographically encompasses two maritime segments—the Arabian Sea to the west and the Bay of Bengal, which connects to Southeast Asian waters. An annual monsoon season for Indian Ocean sailing ships, which begins in August with a summer south-west monsoon and ends in May, allows IOW seafarers to conduct voyages three times a year. The monsoons are seasonally reversing. A first summer southwest monsoon is relatively short (late August–early September). A winter northeast monsoon gives sailors a long sailing period (middle

October–late March). A second summer southwest monsoon lasts almost two months (early April–late May). The summer monsoon current flows clockwise, and the winter monsoon current flows counterclockwise. However, the period between mid-May and mid-August is out of sailing season, and it is not worth setting sail offshore due to the intense summer monsoon and unstable weather in the open sea, although it is an essential time for sailors to undertake repairs and maintenance of ships that are engaged in coastal fishing and pearling.

Offshore sailing was hazardous in the eastern Indian Ocean in the first half of the first millennium. The record of a prominent voyage by a Chinese Buddhist monk, Fa Xian (337–422 CE), known as *A Record of Buddhist Kingdoms* of the fourth–fifth centuries, describes how offshore sailing started to be practiced in the eastern part of the IOW (Sen 2006). He undertook a long journey from China to India and then Sri Lanka for a pilgrimage, and on his return trip from Sri Lanka to China, he voyaged on a Brahmanic (Indic) ship from Sri Lanka to southern China. The account indicates the need for more skills and knowledge in navigation around the time. Yet, the Brahmatic ship, whose name often appears in the later Chinese historical accounts, was one of the few ships available for a long sea journey.

Maritime Silk Route Ships in the Last Quarter of the 1st Millennium

Voyages became refined in the following century, propelled by the development of navigation and improved knowledge of the monsoons, along with the advent of ships with improved seaworthiness. The name of the Kunlun ships, the vessels of Southeast Asian (Malay-Austronesian) seafarers, appears as early as the fifth century in the dynastical account of *Nanqishu,* described as an overseas merchant ship that dealt with silk (Fukami 2022). Following the diplomatic exchange by China's court with the Southeast Asian region and Indian sub-continent in the fourth and sixth centuries, the records of Buddhist pilgrims indicate that water transport became a travel method across regions by the eighth century (Acri 2018). An account of the Chinese monk I-Ching (635–713 CE) depicts his westbound voyage from Guangzhou, China, to Tamluk in India via Southeast Asian waters in the late seventh century. The records of his sea journey note the number of days he had to spend to complete the voyage. In 671 CE, he journeyed on a *posi* (Persian) ship from Guangzhou on the first part of his trip, which took approximately twenty days to cross the South China Sea, eventually reaching Palembang, the capital of the Srivijaya Kingdom. The ruler of Srivijaya offered him the use of his Kunlun ships to continue his journey. He took another twenty days to pass through the modern Strait of Malacca and finally arrived in the Bay of Bengal.

Buddhist missionary monks from India traveled to China. Vajrabodhi, a monk of Vajrayana Buddhism, conducted an eastbound journey by sea from Sri Lanka to Guangzhou in the early eighth century that took almost two years. He left Sri Lanka in 717 and voyaged on a Sri Lankan ship to cross the Bay of Bengal. The latter part of his sea journey along the coast of Mainland Southeast Asia was challenging, and he had to stop in more than twenty countries. During this leg of his trip, he was escorted by several Persian and Sogidian

merchant ships (Nakata 2016). The Sogdians' involvement in land Silk Road networks in many parts of Southeast and East Asia has been acknowledged and is mentioned in various iconographical sources (figure 1), yet there is also considerable evidence of their involvement with maritime trading as well, as addressed in the section below.

By examining what is described in historical records, we understand that Buddhist monks used three types of ships for transport. Another account refers to the hazardous trip of a prominent Chinese monk, Jianzhen (or Ganjin 鑑眞, 688-763) (Tono 2009). Ganjin, a high monk of the Daming Temple in Yangzhou, later devoted his life to spreading Buddhism in Japan. He voyaged from China to Japan several times, starting in 743. For the sixth sea journey, he departed from Mingzhou (明州 or Ningpo 寧波) in 753, finally landing in what is now Okinawa, Japan, with his disciples, including Sogdian monk Anrubao. His fifth trip, between 748 and 751, was the worst. After leaving a port on the middle coast of China, his ships were heavily damaged and drifted to the island of Hainan, China. When visiting Guangzhou to find a boat to return, Ganjin recorded what he observed in this flourishing port of the Tang dynasty. According to *Tang da he shang dong zheng zhuan* (唐大和上東征傳, Biography of the Eastern Journey of Great Monk of Tang), there were three temples for Indian religion at the port (Brahmanism or Hinduism) where monks learned Sanskrit (Fukami 2022). There were also countless Indic, Kunlun, and Persian ships carrying spices on the river.

Nodal Ports of the Maritime Silk Routes

Following initiatives with shipping by the Indic and Kunlun traders, by the late seventh century, the Persians were involved in maritime transport centered in Guangzhou. According to I Ching's account, in the year 672, which is a year after the voyage as mentioned above, there was an encounter of a monk Xuankui with a Persian ship owner in Guangzhou. By this time the Persian royalty and nobles had already served in the Tang court and the Sasanian diaspora from Islamic expansion had settled in Chinese cities after the corruption of the Sasanian Empire in 651.

Finding wrecks that date back to the early to middle seventh century have been limited to the South China Sea or the Indian Ocean. However, other artifacts and sources can indicate the movement of shipping during this period, an example of this is a painting of a merchant ship from the fifth–seventh century's Ajanta Cave. Additionally, the discovery of anchors of a medieval Indian Ocean type, said to have been recovered from the Bay of Binh Son in Central Vietnam (see the section below), may be proof that seafarers sailed across the South China Sea and Indian Ocean. The late seventh-century cross-arm anchor has a distinctive anchor weight in the form of a lead collar, and identical components of such anchors have been found in Bet Dwarka on the western coast of India (McCann 2019; Gaur et al. 2002) (figure 2).

Islamic accounts dating to the last quarter of the first millennium provide information that helps identify the active trading hubs and ports used by seagoing ships engaged in

cross-regional voyages and trade. Some prominent nodal ports operated for a long time, as represented by the port of Al-Ubulla, which is said to have been an early port situated in the Persian Gulf. After 638 CE, Basra became a more significant port in the region (Kuwabara 1916). Siraf expanded around the fourth to the fifth century and became the largest port in the Gulf. After sailing out of these ports, the Indian Ocean seafarers stopped at Suhar and Muscat in modern Oman, Aden, and Yemen. Muslim merchant ships could take a coastal route connecting to Daybul (Debal) in Pakistan, which was to come under Islamic control (figure 3) (Khan 1960). This sea route continues southward along the Malabar Coast or, by using the seasonal monsoons, crosses the Arabian Sea to reach Kalam Malay in South India. Sailing onto China from South India, they passed either the southern coasts of Sri Lanka, where the port city of Godawaya is located, or into the waters of Mannar, where the port city of Mantai (Manthai) was situated. Crossing the Bay of Bengal, people on eastbound ships could see the Andaman and Nicobar Islands. They could then sail into the South China Sea via the Strait of Malacca and arrive in Guangzhou, the final destination for many Indian Ocean World (IOW) merchants. Guangzhou was the gateway for the transshipment of goods into China, which were transported to Fuzhou, Yangzhou, and Mingzhou (Ningbo) ports along the northern coast. During the Tang Dynasty (618–907 CE) in China, Yangzhou was also known as a nodal port for settlements from Sogdia, Persia, and Unified Silla (668–935 CE) and was visited by Japanese envoys. The foreign settlements in port cities such as Yangzhou and Guangzhou were often threatened by China's rebellions: the Yangzhou Massacre in 760 CE from the An Lushan Rebellion and the Guangzhou Massacre (877–878 CE). The Massacre led the Indian Ocean merchants to retreat to the port cities on the Malay Peninsula, such as Kedah.

Additionally, the Maritime Silk Route stretched into the Far East; for example, the voyage across the Yellow Sea between the Shandong Peninsula in China and Dangseong (Danghang Castle) in Korea was an active trading route, and further north Bohai (or Balhae, 698–926 CE) controlled the maritime networks. This network reached Japan through private merchants' activities and diplomatic exchange. The earliest known evidence of this trade are Islamic jar shards dating back to around 768 CE found at the Saidaiji Temple in Nara (Kochi 2014).

The early second millennium, during the tenth–thirteenth centuries, witnessed the rise and development of new polities including the Song and Yuan Dynasties in China, the Khmer Empire and Pagan Kingdom in mainland Southeast Asia, the Mayi in Mindoro of the Philippines, the Srivijaya based on the island of Sumatra, the Boni based in Borneo, the Chola Dynasty in southern India, and the Fatimid Caliphate in North Africa and West Asia. This facilitated the decline of old ports, the growth of new ports, and the expansion of maritime commercial networks. The port polity of Srivijaya, based in Palembang, controlled an extensive maritime space surrounded by the Malay Peninsula, Sumatra, and Western Java. This area was accessed by the IOW traders as well as Chinese traders.

This expansion was triggered not only by the advent of Muslim networks but also by the medieval rise of new shipbuilding industries situated on the middle and southern Chinese

coasts, which occurred in the Song Dynasty (960–1127 CE) (Shiba 1968). The latter gave impetus to the expansion of a network of ports that assisted the active engagement of Chinese merchants in profitable maritime trade. This Chinese expansion was characterized by Song merchants boldly sailing overseas using their own ships, as evidenced by the wide distribution of stone anchor stocks used by East China Sea traders (figure 4). The shipyards served seagoing vessels for their long-distance voyages and they were established around the areas south of Hangzhou Bay and along the coast around the Taiwan Straits and the area of Guangzhou. Quanzhou was settled by Muslim traders and their descendants and recognized as one of the rising ports at the time; evidence of this was the discovery of the thirteenth-century ocean-going Quanzhou Shipwreck in the East China Sea. The improvement of the port networks in East Asia and Southeast Asia was also triggered by the Yuan Dynasty (1271–1368 CE), which was established by the Mongols, a political entity that used its naval power to expand its empire, as evidenced in several archaeological sites (Kimura 2014). Political tensions arose between nations competing for trade, but there was enough demand for trade goods to accommodate most private traders. The naval campaign into Indonesia caused internecine struggles and intrigues in the regime of Singhasari, a Hindu kingdom based in eastern Java, that had controlled the Indonesia archipelago in the thirteenth century and was followed by the establishment of Majapahit empire (1293–1527 CE) in Java.

The Heritage of Port Ruins of the Silla and Song Merchants in East Asia

Assessing port sites is relevant not only to maritime heritage but also, more broadly, to these sites' cultural, historical, and archaeological heritage. The Maritime Silk Route heritage highlights the historical role of nodal ports, as shown by the tangible aspect of maritime activities such as harbors, warehouses, merchants' settlements, shipbuilding yards, piers, and jetties.

The Korokan (Tsukushi no Muromitsu) site in present-day Fukuoka city is an example of an archaeological site of maritime infrastructure in East Asia related to the Maritime Silk Route. The site has remnants of buildings associated with the ancient port of Hakata and was a facility used by envoys (figure 5), foreign diplomats, Buddhist monks, and Silla Merchants when staying in Hakata and conducting trade. It was built on the coast of Hakata Bay as early as the late seventh century and, in the ninth century, was renamed Korokan. A rescue archaeological excavation revealed the basement structure of the guest house dating to the period mentioned above, with several of the artifacts originating from overseas. These include broken pieces of a turquoise glazed pottery storage jar manufactured in Iran. The turquoise-glazed jars date to the Sasanian and Islamic periods and were extensively distributed between the East African coast in the west and Japan in the East, a testament to a broad maritime trade network. Korokan is a Nationally Designated Site under Japan's Law for the Protection of Cultural Properties. The Korokan site as a port facility of Hakata demonstrates that it was

a gateway for the Maritime Silk Route commodities flowing into the Far East.

Chronological View on the Wrecks of Asian-Built Traders

The wrecks listed below were found in the Indian subcontinent, Southeast Asia, and East Asia and have provided significant insight into the cargo, seafarers, and merchants during the heyday of the Maritime Silk Route trade. The value of the shipwrecks and associated cargo as important archaeological heritage has been addressed by examining the diverse wreck sites in Southeast (Heng 2018). The well-preserved hull remains of these vessels are protected *in situ* or have been excavated and transferred to museums.

Yeongheungdo Shipwreck (8th century)

This shipwreck has been dated to the period of the United Silla (National Research Institute of Maritime Cultural Heritage 2014). It is the only ship remains of the United Silla ever excavated underwater. The remnants of the hull are 6 m long and 1.4 m wide. Only three timbers survive, yet they are robust, with two timbers being bottom strakes. The overall structure of the remaining part of the hull shows similarity with the coastal traders of the Goryeo Dynasty (918–1392 CE). A portion of a long wooden bar or square tenons to fix the center strakes remains, and these are neatly slotted through associated apertures cut in each bottom strake to join them tightly. The bottom strakes have chine strakes with an L-shape section and they fit on both sides of the hull bottom connecting side strakes but no side strakes survived on the Yeongheungdo Shipwreck. The ship carried iron pots for trade.

Belitung Shipwreck (mid-9th century)

The Belitung ship was of identical construction to the sewn ship, the Phanom Surin. The Belitung shipwreck was discovered in 1998 in the waters near Belitung Island in the Java Sea, Indonesia. It is said that more than 60,000 items have been salvaged and, of them, the vast majority being some 57,000 ceramics mainly produced in inland kilns in China for overseas export (Tang Export Ceramics). The ship sank sometime between 826 and the 840s. The date was determined by relative dating based on an inscription on a ceramic bowl, typological study, and absolute dating based on the study of coins (Krahl and Effeny 2010). The result of the radiocarbon dating on the aromatic resin, star anise, and the ship timber supports the date (Wilson and Flecker 2010). The vessel's hypothetical reconstruction based on limited information indicates that the displacement of the ship could be at least 55 tons (Vosmer 2014, 2019; Vosmer et al. 2011); however, considering the amount of the recovered ceramic cargo, the dimension of the hull is likely to be larger and its displacement needs to be re-examined (Tom Vosmer, personal communication to the author, 2024). The hull is of sewn-plank construction, showing linkage with a shipbuilding tradition endemic to the western

Indian Ocean today (Vosmer 2014, 2019; Vosmer et al. 2011). However, there is some debate regarding its construction based on contentious species identification (Haw 2017, 2019). That the hull was not protected *in situ* has given rise to difficulties with the examination of the ship. It was initially identified as an Arabic ship. The assemblage of artifacts from the wreck shows strong connections with the Chinese-Sogdian material culture and society in Yangzhou, as addressed below.

Phanom Surin Shipwreck (late 9th century)

The ship's remains demonstrate that construction methods originated from the western part of the Indian Ocean (the Persian-Arab shipbuilding tradition). The Phanom Surin shipwreck was found in 2013 in an estuarine area in Samut Sakhon Province, near the ancient port of the Dvaravati Kingdom (Jumprom 2019) (figure 6). The ship was estimated to be at least 25 m long and 8 m wide. The hull shows the features of a sewn-plank ship, common to the western Indian Ocean. It was constructed using sugar palm ropes (*Arenga pinnata*) and woods native to Southeast Asia and the eastern Indian subcontinent, such as *Shorea obtuse* for its planks and *Hopea odorata* for its frames (Grote et al. 2021). The hull planks are sewn together by ropes, the ropes stitch over organic fiber wadding that covers the planks' seams. The result of an accelerator mass spectrometry (AMS) radiocarbon dating has dated the wreck to around the late ninth century (Jumprom 2019; Grote et al. 2021). In the late ninth-century Chinese document *Ling Biao Lu Yi*, written by Liu Xun, who lived in Guangzhou in 888–904 CE, he mentions the construction of a foreign merchant ship used in Guangzhou (Kuwabara 1916; Fukami 2022) as a merchant ship built without iron fastenings. Ropes of sugar palm (*Arenga pinnata*) were also used to fasten the boat's internal structure. For caulking (wadding), gaps were filled with glue made of Chinese olives (*Canarium album*). Apart from excavated shards of a turquoise jar and a torpedo jar originally from present-day Iran (Guy 2017a; Connan et al. 2020), there are also some jar fragments from the Chinese kilns in Xinhui and Fengkai in Guangzhou.

Cirebon Shipwreck (10th century)

It is a controversial shipwreck, similar to other wrecks found in Indonesia, as it was commercially salvaged in a way that ignored the value of the hull. While half of the cargo from the Cirebon is said to have stayed in Indonesia, the other half was legally purchased by Qatar Museums in 2013. The Cirebon Ship was a Southeast Asian trader possibly operated by Malay-Austronesian seafarers who were dominant in the South China Sea's maritime trade. Their ships are considered to be of lash-lugged construction (Manguin 2019). The Southeast Asian shipbuilding technique constructed the hull shell-first with blind wooden dowels as fastenings for the edged joint of the hull planks. the hull of the shipwreck, which lay on the seabed at a depth of 57 m in the waters ninety nautical miles from Cirebon of present West Java Province, uses the edged joined planking (figure 7). Like the other salvaged wrecks, the

state of the hull and whether it is preserved is unclear. Following the discovery of the wreck in 2003, the salvage operation retrieved around 205,000 objects.

Nanhai No.1 (late 12th century)

The shipwreck is of Chinese origin, dating to the late twelfth century. It was discovered south of Guangzhou in 22–24 m of water (figure 8). The ship might have departed from Quanzhou, a trading post during the Song Dynasty. The construction of seagoing trading ships around the area enabled a greater involvement of Chinese merchants in maritime trade. It increased the volume of goods transported along the Maritime Silk Route. The Nanhai No.1 reflects some features of the East China trading ships, showing good hydro-performance and cargo-carrying capacity. The shipwreck was recovered from the seabed in 2007. The merchant ship had a cargo of intact trading ceramics stored in its holds that were divided into twelve sections by bulkheads and has been under continuing excavation in a pool purpose-built for it at the Maritime Silk Route Museum in Guangzhou. The surviving hull is 23.8 m long and 9.6 m wide. More than eighty thousand metal items, including more than 17,000 copper coins, 13,000 pieces of ceramics manufactured at inland kilns in China, and aromatic woods. The background of the people and merchants on board the vessel was of multinational origins, possibly from both China and the Indian Ocean World. This assessment is based on artifact analysis from the ship, which suggests that the ship's destination was probably somewhere within the Indian Ocean. Such shipwrecks are regarded as part of China's archaeological heritage and provide new insight into Chinese medieval maritime trade and naval construction techniques.

Quanzhou Shipwreck (late 13th century)

The Quanzhou Shipwreck is another resource that provides further details of the East China Sea traders (Kimura 2016). Quanzhou was a flourishing port during the twelfth to thirteenth century. The Quanzhou Shipwreck was found in the 1970s and is a trading vessel with a cargo of South China Sea commodities. It was a milestone in the study of Chinese maritime history and shipbuilding technology. The Quanzhou Shipwreck was found in the tidal mud flats of the modern Houzhu Harbor along the river Luoyangjiang that flows into Quanzhou Bay. During the full excavation in 1974, the well-preserved lower hull was revealed, it was dismantled, and transported away from the site. The dismantled components were reconstructed and are now displayed at the Quanzhou Ancient Ship Gallery in the Kaiyuan Temple at Quanzhou City in Fujian Province. The overall length of the hull is 24 m and 9 m in breadth (figure 9). The main structure of the hull is composed of a keel and twelve bulkheads constructed with sturdy planking. Apart from the surviving hull, a relatively small amount of the original cargo was found, indicating that most of the cargo was probably salvaged after the wreck event. However, these recovered artifacts, including fragrant wood, help us deduce that the ship was inbound from Southeast Asia.

Shinan Shipwreck (14th century)

The Shinan shipwreck was discovered in South Korean waters. Holding a variety of cargo, it sank during passage from China to Japan in the first quarter of the fourteenth century (Kimura 2016). The hull is as large as that of the Quanzhou ship, measuring 28 m in length and 6.6 m in breadth (figure 9). The estimated cargo capacity of the Shinan ship would be over 200 metric tons. The cargo was raised during the 1977 to 1984 excavations and includes 20,661 pieces of ceramics. Significant items include approximately 28 tons of coins, 1,017 pieces of wood, and 729 metal objects. The cargo of this shipwreck represents an intra-regional trade between Korea, China, and Japan during the Yuan Dynasty (1271-1368 CE). The Yuan rulers of the Mongol Empire adopted a strict policy of control of overseas trade. In addition, the Mongol naval invasions caused a temporary decline in overseas diplomatic exchange, including communication between Japan and China. Under these circumstances, maritime trade was sporadic but continued due to overseas demand for commodities that were to the continuing benefit of Japan. The Japanese temples and shrines were involved in delegating ships, but the owners of the chartered boats and the sailors may have been Chinese. The shipwreck provides evidence of how maritime commercial activities along the Maritime Silk Route were maintained under political tensions due to the expansion of a maritime hegemony.

Heavy and Bulky Seaborne Commodities

The Silk Road's trading commodities comprised many items, including organic materials such as wines, oils, frankincense, books, manuscripts, incense, textiles, and silks. The production of silk textiles dates back to as early as 4,700 BCE, evidenced by the archaeological discovery of silk at the Qianshanyang site in the Zhejiang Province, China. Over fifty-five dyed silk textiles have been excavated across Eurasia (Ogata 2012a), including the early Han Dynasty's textiles along the inland Silk Road as far as Palmyra, which represent the westbound trading routes and that the silk was still being manufactured in China. Notably, textiles of the Asuka-Nara periods (end-sixth century to end-eighth century) preserved in the World Heritage Shosoin Repository in Nara show the patterns and motifs of the Sui and Tang Dynasties originally from the Greek, Egyptian, Indic, and Persian regions. Yet, most of the textiles were manufactured in Japan (Ogata 2012b) as manufacturing techniques had been introduced into Japan by that time.

Some trading items transported along the Maritime Silk Route are listed in written sources, which have been addressed from a chronological viewpoint (Wang 1958). Maritime shipment could have maximized efficiencies when transporting bulky and heavy cargo, as it was an expensive exercise for land transport. This maritime transportation of bulky and heavy cargo was quite profitable for the ship owners. Looking at the surviving material remains today, the most profitable goods freighted along the Maritime Silk Routes include

glass, metals, spices, and ceramics.

Glass and glass products: Among these profitable goods transported were glass products that were vulnerable to breakage and valued for their beauty and technological mastery. Some regions in the western maritime Silk Route would have been a source of raw materials for these manufactured glass items. Therefore, beads and glassware represent a primarily Western region export for markets in the East (Lankton 2022). Remarkably, some of the beads produced in the West were transported to the Japanese archipelago relatively soon after their production started. The oldest Indo-Pacific beads discovered in Japan date to the third century BCE (Tamura 2021). Some of the heavy glass raw materials were transferred by ship, as demonstrated by findings at the Godawaya Shipwreck. Two glass ingots of high-alumina soda glass were retrieved from this wreck site, possibly from South India (Chandraratne et al. 2012).

The glass trade moved products and raw materials by combining land and sea routes (Lankton and Dussubieux 2006). Entering the last quarter of the first millennium, the shipment of glass started to show a combination of glass beads and glass wares. An ice-blue glass bottle found at the Belitung shipwreck was manufactured in present-day West Asia (Middle East) (Chong and Murphy 2017) and represents the trade of glassware of around that time. There were active ports where West Asian manufactured glass wares could be unloaded. These ports were located on the western coast of the Thai-Malay peninsula, such as Klong Thom, Koh Kho Khao, and Bujang Valley (Murphy 2017), along with connecting trading hubs on the other side of the Peninsula, as evidenced on the site of Laem Pho. Furthermore, fragments of glass dating to the late eighth century–ninth century found on the islands of Cu Lao Cham off the coast of Hoi An, Central Vietnam, support the role of a Southeast Asian entrepot in the transshipment of glass goods (Kikuchi and Kikuchi 2020).

Underwater excavation at the Intan Wreck successfully recovered not only 254 glass beads but also 144 pieces of glassware (Flecker 2002). Most of the glassware is comprised of fragments, although an almost intact small glass bottle with a cylindrical body was found. The Cirebon ship carried a substantial amount of glass consisting of 26,726 glass beads, raw glass, and glass wares (Swan 2020). ICP-MS analysis has revealed their provenience, with most of the Cirebon glass beads being of soda-lime-silica glasses originating from West Asia. It has been indicated that the 24,589 beads would only fill one carry bag, and there could be quite a few large bags or ceramic jars containing a larger number of beads on board. In addition to the glass beads, the ship carried 94 pieces of raw glass weighing 35 kg and more than 2,500 fragments of glass vessels of various shapes, including bottles, vials, flasks, and ewers (Swan 2018). The glassware from the Intan and Cirebon ships is similar to glass vials and bottles from Buddhist temple sites of the Northern Song (960–1127 CE) in Gansu Province, Beijing, Habei, Hanan, Anhui, Jiangsu, and Zhejiang Province. A glass ewer from the Cirebon wreck is comparable to those found in China and Japan.

Glassmakers from West and Central Asia served at the court of Sui (581–618 CE) in China: for example, Hetong, whose family name probably comes from Sogdian Kusana, appears in a historical account. Glass manufacture in China developed through the Tang

period and matured in a way that was no longer a proprietary technique possessed by a court of Northern Song. The export of Chinese glass products from the early twelfth to the thirteenth century has been found in other shipwreck sources. It is said that the remains of the glassware salvaged from the early twelfth century's Pulau Buaya Wreck found off the coast of Riau in Sumatra could be of Chinese origin (Ridho and McKinnon 1998), however, this has not been chemically analyzed. Comparatively, the chemical composition analysis on glass products found at Nanhai No. 1, consisting of glass rings and glassware fragments, has been determined as lead-potash glass that was manufactured in Southern Song (Tian et al., 2023). It is noted that a glass manufacturing workshop with more than two hundred melting pots has been found at the Song people community sites of a medieval port in Hakata, Japan.

Metal objects, metals, and coins: The shipping of metal objects in large amounts was a profitable business, however, some traders overloaded their ships with heavy cargo, which sometimes caused the loss of that vessel. Metal currencies were part of a trend in bulky cargo. It is a well-known fact that the Roman Empire suffered from the loss of currency due to maritime trading—a coin drain from territories in the west to the western coast of India that were mainly transported by ship across the Erythraean Sea. Mass export of Chinese copper coins by ships occurred during the Song and Yuan Dynasties for markets in northern Vietnam, Java in Southeast Asia, and Japan in East Asia (Heng 2006; Guy 2019; Miyake 2018). The cargo of the wrecks of the late twelfth and fourteenth century East China Sea traders, which left ports of the Chinese coasts, demonstrate the role of the shipments on market demand. The Nanhai No. 1 carried at least 17,000 copper coins, whose destination could relate to the currency demands in Southeast Asia. The twenty-five tons of copper coins (more than 8,000,000) recovered from the fourteenth-century Shinan Shipwreck certainly reflect the needs of Japan's medieval monetary societies, which relied on imported coins at the time.

Raw metals could have been the most profitable freight by shipping them from production to consumption. They were transported as heavy ingots and metal objects to be melted down for reuse. The Belitung ship is said to have carried at least ten tons of lead ingots, which lay on the bottom of the hold and functioned as ballasts, while nine lead ingots were found inside a Guangdong container jar (Chong and Murphy 2017). Meanwhile, the sixty-six gold and silver objects recovered from the Belitung wreck, believed to have been produced in Yangzhou (Qi 2017), clearly show a Sogdian style with a Chinese motif. The typological study of Sogdian style cups in Tang China has been argued early, following the finds at the Hejia Village Hoard in Xian Shaanxi Province of over one thousand pieces of metalware and silver ingots dating to the mid-eight century (Kuwayama 1977). Eighteen silver ingots with a length of 18 cm were found at the site and possibly were mined in Guangdong or Guangxi (Louise 2017). The Belitung shipwreck ingots are similar to other Tang silver ingots (described in Chinese as boat-shaped) with a length of around 18 cm, weighing about 1,800 g, and being worth fifty *liang* (兩).. Outside China, the eighth century's votive offerings found at the Kofukuji temple in Nara include silver ingots of a similar size but thin in shape. In addition to the trade of copper coinage, trading silver was common in Asia and was linked to

taxation and international currency.

Metal artifacts from shipwrecks dated to the tenth century onward illustrate more clearly the expansion in the export of heavy metal items during the Song period in China. Various types of raw metals started to be a part of the freight of ships, and the inter-regional transit of the metals within Southeast Asia emerged. A study of the mid-tenth century's Intan Wreck has reported the recovery of more than eight hundred bronze (or copper) ingots in bar and dome shapes, nearly eight hundred tin ingots, twenty lead ingots, and over ninety silver ingots (Flecker 2002). Further study clarified that ninety-seven silver ingots were equal to five thousand *liang*, and incised Chinese inscriptions on some of them indicate that they were from inland Chenzhou, China (Twitchett and Stargardt 2002). Comparatively, the tin ingots from the Intan Wreck are a rare find. They are said to have been mined and exported from the Malay Peninsula or refined on islands within Indonesia (Flecker 2002; Twitchett and Stargardt 2002). On the other hand, Southern China, including present-day Jiangxi, Guangdong, Guangxi, and Yunnan, had the world's most productive tin mining sites.

During the twelfth century, there was a significant increase in metal trading between Southern Song and surrounding regions, and a substantial amount of iron was exported from China by sea. Southeast Asian regional trading vessels from the early twelfth century carried iron bars and blades (Flecker 2019). The Huaguang Jiao 1 and Nanhai No. 1 shipwrecks, dated to the late twelfth century, yielded iron bars produced in Southern Song China (figure 10), and the thirteenth-century Java Sea Wreck carried some bundled iron bars (Niziolek et al. 2018). The evidence of iron as a significant export may indicate an excess of iron made in the Song's economy rather than market demands in Southeast Asia. A recent study of identically bundled iron bars found in Japan addresses the impact of the import of iron from the Song on medieval domestic iron production in Japan (Momosaki 2023).

Copper ingots have been one of the lasting seaborne commodities for regional trade. Pure copper ingots in a brick shape were recovered from the Pulau Buaya Wreck and Java Sea Wreck. The Ayutthaya Kingdom, for example, shows the growth of copper exports, as evidenced by copper ingots excavated from a few wrecks near Si Chang Island in the Gulf of Thailand (Harper 2016). The Bang Kachai II Shipwreck of the seventeenth century found in Thailand yielded 195 copper ingots in four distinctive shapes (Venunan et al. 2022).

However, the maritime trade of copper alloys and bronze products to be recycled emerged earlier. Many bronze items such as statues, figurines, ornaments, and metalware were shipped according to specific demands, for example, religious beliefs and practices. Underwater excavation at wreck sites has exposed the critical role of supplying religious items related to Buddhist and Hindu practices. At the time of the sinking of the Cirebon in Indonesia, the Buddhist Srivijaya Kingdom was established in Palembang in southern Sumatra. Surviving metal objects from the wreck may have belonged to the crew. They may represent the items of belief, philosophy, dogma, myth, and religious narratives used by the crew during long-distance voyages. Conversely, the ritual items and statuettes might have belonged to one or more monks traveling on the boat. The tenth-century Cirebon shipwreck also yielded religious objects relating to Vajrayana Buddhism (figure 11). A figurine of a

Makara, a mystic sea creature in Hindu-Buddhism mythologies, has been recovered from the Java Sea Wreck.

Spices and aromatic woods: Spices and aromatic woods have been a major seaborne commodity with their use varying from medical products to religious items and for dying material. Merchants widely recognized their profitability due to their scarcity and owing to their origin in remote places dominated by the tropical monsoonal climates of South Asia and Southeast Asia. The cargo recovered from wreck sites is evidence of the ocean transport of spices and aromatic woods. The late ninth-century Phanom Surin shipwreck yielded the remnants of nutmeg, and star anise (*Illicium verum*) were found inside a Guangdong-type jar when the Belitung Shipwreck, dating back to the ninth century (Flecker 2000, 2010). Heavy ceramic jars were often filled with large quantities of spices ready for transport.

Moreover, a historical account, *Bai Shiragi Mononoge* [Purchase list of goods from Shilla], contains a purchase list of items from Silla merchants and is a record of trade between the Japanese nobles and Silla merchants in 752, showing the inventory of spices from outside Japan and their prices (Tono 1974). Spices and plant materials were transported a long distance by ship, such as spices from India, China, and Southeast Asia, which were stored in the Shosoin Repository in Nara, Japan, in 756 CE. Botanical medicines, composed of herbal and wooden material, were held in the warehouses of Shosoin for over twelve hundred years until 1963. Species identification (Kunaicho Shosoin jimusho 2000) has revealed that some plants were sourced from distant places, such as *Phyllanthus emblica*, which grows in India and Southeast Asia, *Saussurea costus (costus)* from India, and *Syzygium aromaticum (L.) Merrill and Perry* (clove), endemic to the Moluccas. There are a few examples of rosewood and agarwood in the Shosoin collection. A large agarwood piece (*Aquilaria spp.*) has a length of 156 cm and a weight of 11 kg, although its inside is hollowed out, with the resin attached to its surface, giving extra weight.

A piece of sandalwood in the collection of the National Museum originally came from Horyuji Temple and bears incised Pahlavi inscriptions and Sogdian brands. It could have been brought into Nara sometime during the eighth century CE. Historical accounts suggest that trading fragrant woods through maritime routes became active around the eighth century, initiated by the Persian merchants in cooperation with the Sogdians (Arakawa 2019) (figure 12). The cargo of the Guangzhou ship, an inbound ship that carried goods from Southeast Asia, contained incense and fragrant woods such as rosewood, sappanwood, and agarwood, as well as spices such as pepper. At the Shinan Shipwreck of the fourteenth century, a thousand pieces of rosewood were excavated. The agarwood represents one of the most valuable forest products transported in bulk by ships and was one of the most significant items in the Maritime Silk Route trade. Siam (Thailand) was a prominent supplier in the fourteenth to fifteenth centuries. In 1451, for example, sixty-three tons of agarwood were exported to China and Japan via Ryukyu.

Ceramics: An enormous number of East Asia ceramics were distributed to the West through a network of maritime trading routes, called the Maritime Ceramic Route (Mikami 1969). Ceramics were in various forms, from figurines to ornaments and general ceramic

wares. A significant source was the inland kilns in China, which exported to Southeast Asia (Miksic 2010, 2022). Persian turquoise glazed jars of the eighth–ninth century represent ceramics used as containers from the West to the East and have been excavated at a few sites, including a port site in Thailand and at the Korokan Site, the port city Hakata, in Japan. The ceramic production was centered in China as many kilns inland have been engaged in mass production over the centuries where production was linked to market demands.

Changsha ware, Gongxian, and Yue ware represent the Tang Export Ceramics distributed broadly along the Maritime Ceramic Routes. The Changsha ware varies in motif and design according to market demands. The ceramics from the Belitung Shipwreck are remarked upon as "aspiring to anticipate different client needs" (Guy 2017b, 163) by referring to the motif of Makara on the Changsha bowls. The Makara (Sea Dragon) was from Indic mythology and was one of the famous Silk Road motifs adopted in the contexts of the Sogdian arts and Buddhism (figure 13). The famous ewer from the Gongxian kiln adopts a Persian style in its shape but uses the Makara head as a stopper. The ceramic cups produced by the Gongxian kiln copied the design of Sogdian silver cups. In the study of Tang ceramics from the Belitung Shipwreck, it is said that "the close similarity in forms shows the influence of metalwork on this group of ceramics" (Khan 2017, 59) (figure 14). Both metal and ceramic wares show the influence of Sogdian craftsmanship and Buddhism, explicitly with the swastika motif. Some of the Belitung Shipwreck ceramics indicate the involvement of groups with a Sogdian background in Persian and Arabic maritime trade.

During the political stability of the Song Period, the rise in popularity of Celadon ware was reflected in the growing ceramic industry in the twelfth to thirteenth centuries. While kilns in Guangdong had been operating in previous years, the mass production of ceramics in present-day Fujian, Jiangxi, and Zhejiang Province facilitated the dominance of Song ceramic cargos carried along medieval maritime ceramic routes. Nineteen wreck sites in the East China Sea and the South China Sea date back to the thirteenth and fourteenth centuries, taking ceramics from these three provinces (Tokudome 2019). The expansion of networks of port authorities and the construction of seagoing ships on the Chinese coast helped the institutionalization of Song merchants, allowing them to carry commodities from their own countries. Some studies have focused on black ink calligraphy inscriptions on the bottom of those trading ceramics, mainly found at port sites and wrecks. For instance, 910 pieces of trading ceramics found in the late twelfth century's Nanhai No. 1 bear black ink inscriptions of twenty-two family names, seven signatures, and more than forty-four of their combinations associated with cargo (Ishiguro 2021). Such black ink inscriptions are evidence of the mature system of ceramic trading with investment by not only individual merchants but also groups of ship owners, skippers, and financers. The ceramics of the Shinan ship, which departed Ningbo and sank on the way to Japan in the first quarter of the fourteenth century, reflects a joint venture in overseas trading, with the cargo selected by orders from temples and shrines in Hakata and Kyoto.

The Mongol Empire's expansion shifted the trading pattern, leading away from bureaucratic controls. Still, large-scale ceramic export continued in East Asia and Southeast

Asia, as demonstrated by the above Shinan Shipwreck and Vietnam's Binh Chau No. 2 shipwreck, examined in the following section. Fifty-six countries in Asia and Africa were listed as trading partners in the early 13th century, according to Zhao Rugua, who was a *shibori* (maritime trade supervisor), with fifteen regions and countries considered significant exporters. Daoyi Zhilue (1350 CE) describes more than fifty countries that export or import Chinese ceramics. A considerable change in ceramic export occurred when the Ming issued a new maritime policy that affected the bulk export of high-fired ceramics from China. Alternatively, mainland Southeast Asian kilns became prominent in ceramic export (Wade 2010), illustrated by the shipwrecks dated to this period (Orillaneda 2016).

Seascape and the Maritime Silk Route Heritage

The tangible heritage of the Maritime Silk Routes is composed of shipwrecks, maritime trading hubs, and associated seaborne commodities. These important assets represent the outstanding value of the Maritime Silk Route. The wreck sites identified are archaeological sites, and the wrecking could occur relatively near shore and often in the vicinity of ports. The context of the well-preserved wreck site consists of a surviving hull and cargo. Some have been recovered from the original position of the wrecking event through archaeological investigation and excavation. Others have been removed through non-scientific operations. In some limited cases, we can simultaneously examine the remnants of the trading ships and ports. Sometimes, shipwrecks are found relatively near the shore, and there is a case in Central Vietnam in which maritime archaeological excavation of both wrecks and port polities can be undertaken.

Maritime archaeological studies in Binh Son, Quang Ngai Province, Central Vietnam, form a case illustrating that identifying the wreck site leads to a better understanding of the area's involvement in past maritime activities. Numerous objects, mostly trading ceramics from Chinese kilns, have been salvaged from the seabed offshore the Bay of Binh Son. The salvaged ceramics span the periods from the Tang and the Five Dynasties to the Song, Yuan, Ming, the end of the Ming, and early to mid-Qing, indicating the bay has been a historical anchorage over many centuries. None of the physical remains of the port structure have yet been found around the bay. Nearby is the remnant of an old citadel only four kilometers from the present-day coast near the Tra Khuc River delta. It is known as the Chau Sa citadel and very little of its structure is left inside the citadel but its ramparts survive and are of a height of about 4m and the defensive moats are still visible (figure 15). This coastal landscape represents a model of the development of Cham port polities along the Central Vietnamese coast (Giang 2016).

The author's post-archaeological study is currently examining two wrecks with surviving hulls found beneath the seabed of the bay; one is the Chau Tan shipwreck of the eighth–ninth century, and another is known as the Binh Chau No. 2 shipwreck of the middle fourteenth century (Nishino 2017, 2018). Both ships contained Chinese trade ceramics, and the time

range of the two shipwrecks demonstrates the long-term usage of the bay as an anchorage, possibly controlled by the maritime polity that was perhaps based in the Citadel (figure 16).

The ship timbers of the Chau Tan shipwreck have distinctive features. The hull was constructed using the Southeast Asian shipbuilding method, which did not use iron fastenings but wooden dowel-fastened planks. Any description of the structure of a seagoing ship of the Kulun people in a historical account is limited, but nautical archaeological study provides concrete evidence of a shipbuilding technique using many blind dowels (Kimura 2014, 2022). Radiocarbon dating of fiber ropes made of the sugar palm tree (*Arenga pinnata*) used as lashing material resulted in a date of 1214±23 yr BP. Moreover, the typological study of the Tang ceramics—Yue ware, Changsha ware, Northern White porcelains, and Guangdong ware—suggests that the Chau Tan ship was constructed and sank between the end of the eighth century and the beginning of the ninth century. Some of the ceramic cargo bear ink inscriptions, including Indic scripts (Northern and Southern Brahmic scripts), Arabic, and Chinese scripts. The script study on the Brahmic and Arabic scripts suggests they were written in a style widely used between the end of the eighth and tenth centuries. Seventeen bowls bearing the Chinese inscription "han 斑" on Changsha ware may be interpreted as a family name or a "pra" like prajñā in Siddham Script. In the latter case, the Chau Tan ship might have been involved in the transport of Buddhist monks, while Buddhism in Champa flourished in the late ninth century during the reign of Indravarman II (854–898 CE).

The Binh Chau No. 2 was either an East China Sea or South China Sea trader with a bulkhead structure, which is considered to have originated from the shipbuilding industry along the Chinese coast. The shipwreck provides evidence of maritime trading activity using a sizeable seagoing trader in a maritime polity of the Cham port in the early fourteenth century. However, it was not so long before that Quy Nhon, the outer port of Vijaya, was attacked by the invading fleet of the Mongol Empire and fell in 1283 CE. Soon after the withdrawal of the naval forces, the Champa sent delegates to Kublai Khan and attempted to revive the diplomatic relationship with the Yuan Dynasty of the Mongols as a tributary state.

Discussion and Conclusion

The Maritime Silk Route is a term and concept used to explain the broad expansion of maritime space facilitated by various human activities in the past. This has been illustrated in this paper by the relics of historical human activities that remain in the maritime space. The archaeological heritage related to the Maritime Silk Route is composed of the remains of ports and shipwrecks and the material remains of shipments from Southeast and East Asian wreck sites. They illustrate the significance of maritime transport between the eighth and fourteenth centuries. Several ports engaged in cross-regional trade are recorded in written sources, but ancient coastal landscapes and shorelines have changed due to coastal development. In many places, it is not easy to reconstruct the original seascape of the prominent anchorages and bays used during the Maritime Silk Route period. The identification of the structural remains

of port facilities is limited, yet, a case like the Korokan site in Hakata is one example and this site has legislative protection and management strategies ensuring its survival as evidence of a Maritime Silk Route port city.

Reviewing the wreck sites and recovered shipwreck material leads to a chronological framework of the historical transition of seagoing ships engaged in trade along the Maritime Silk Route. The hulls of sunken ships, even those stored at a museum, are important heritage and testimony to understanding maritime transport. Excavated East and Southeast Asian wrecks have led to a better understanding of those ships that appeared in the late first millennium, along with the Silla, Indic, Sogdian, Persian, and Arabic merchants and seafarers that used them. There was a rise in the profile of the East China Sea traders in the twelfth century onward, which also impacted the maritime trading systems in the fourteenth century in the South China Sea region. The Bay of Binh Son in modern Quang Ngai, Central Vietnam, is a unique case to address this transition. The two shipwrecks dated to these periods demonstrate the existence of different types of ships anchored off the coasts of a port polity. Ongoing maritime archaeological study of this area is essential to our understanding of the broader trade activities of the Maritime Silk Routes.

Figure 1. Eighth-century mask of a Persian king, possibly a copy of a Sogdian face (left, ColBase https://colbase.nich.go.jp/) and a face inscribed on a brick from Chedi Chula Pathon, present-day Nakhon Pathom (Dvaravati capital) in Thailand dated to the early eighth century (right, photo by author, courtesy of Phra Pathom Chedi National Museum).

Figure 2. A cross-arm anchor with lead collar weights (left, photo by author). Similar collars have been found off Bet Dwarka Island in Gujarat, India (right, photo by I. McCann). The Belitung ship used a similar anchor.

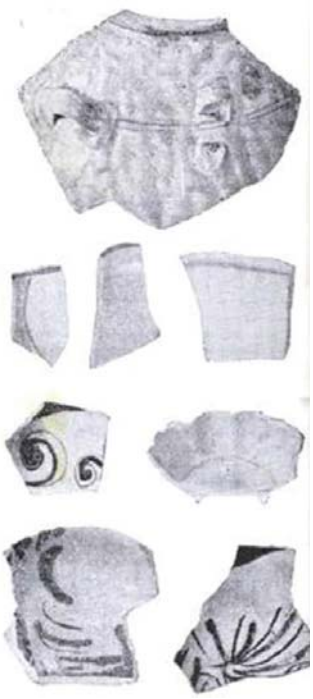

Figure 3. Tang Export Ceramics found at Daybul Changsha bowls and a broken piece of a Guangdong jar (Khan 1960).

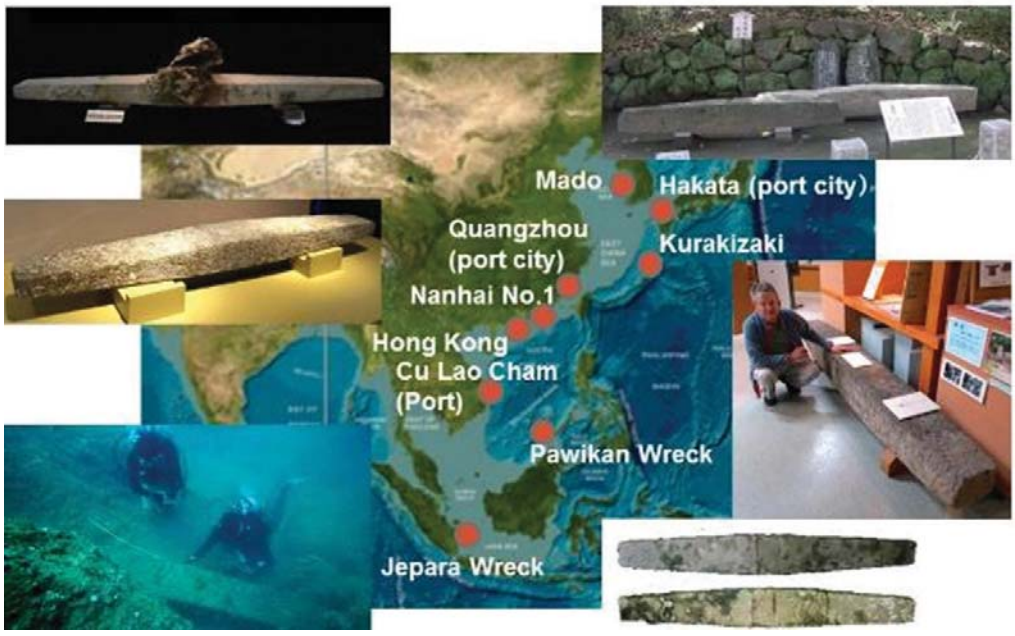

Figure 4. Distribution of the identical stone anchor stock of the East China Sea traders during the Song Period (produced by author).

Figure 5. Reconstruction of Korokan site (above, photo by author) and excavated sherds of Islamic jars, Changsha Ewer, and Silla Pottery (below, photos by author).

Figure 6. Excavated hull of the Phanom Surin ship.
Courtesy of Underwater Archaeology Division of Thailand.

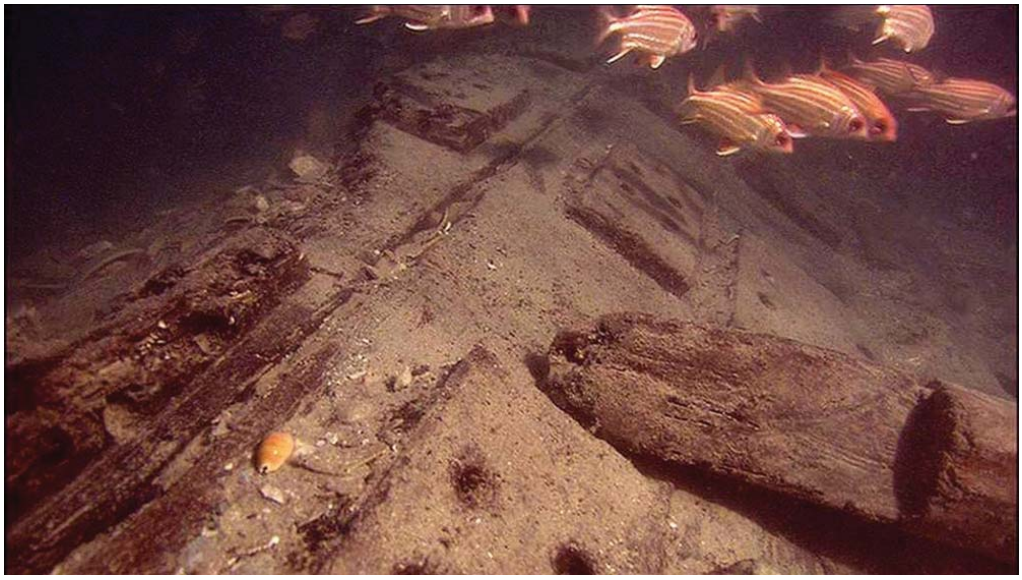

Figure 7. Inner strakes of the Cirebon Shipwreck show protruding rectangular lugs with holes to pass ropes through to fix frames. A robust timber at the right bottom is a part of the frame. Courtesy of Ministry of Marine Affairs and Fisheries of Indonesia.

Figure 8. Excavation of the hull of the Nanhai No. 1. The vessel was lifted from the seabed and is now inside the Museum. The exposed holds show the loading pattern of cargo consisting of iron blades (top, substantially rusted forming concretions) and ceramics (middle) with a hold configuration the same as the Quanghzou ship shown below. Courtesy of Guangdong Maritime Silk Road Museum.

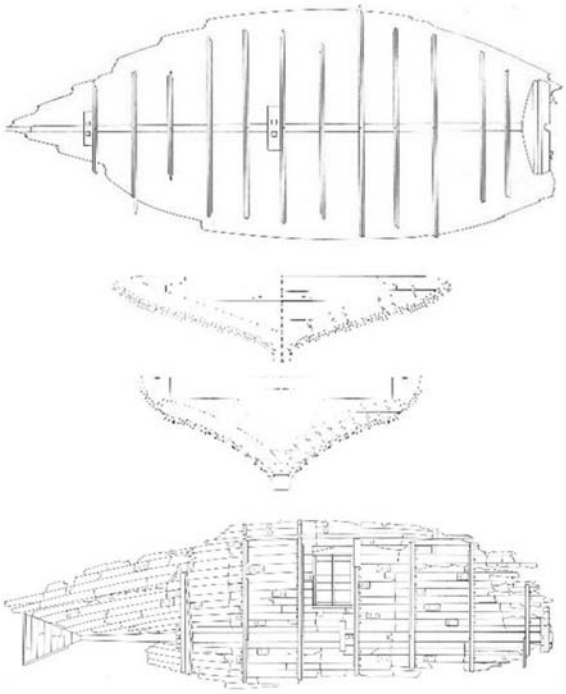

Figure 9. Top view and cross-section of a hull of the East China Sea traders: Quanzhou ship (top) and Shinan ship (bottom) (Kimura 2016).

Figure 10. Iron material recovered from the wrecks illustrates iron export from the Song period of China. These are from the Nanhai No. 1 (left, photo by author), Huaguang Jiao 1 (middle, Underwater Archaeology Research Centre of National Museum of China and Hainan Provincial Administration Office of Cultural Relics Protection 2016), and the Java Sea Wreck (left, courtesy of the Field Museum).

Figure 11. Bronze ritual items for the Vajrayana sect were possibly produced in Sumatra. Photo by author, courtesy of Marine Heritage Gallery Jakarta.

Figure 12. 7–8th c. sandalwood with the incised Pahlavi script and Sogdian marks (left, ColBase, https://colbase.nich.go.jp/), rosewood from the Guangzhou shipwreck (middle, courtescy of the Quanzhou Maritime Museum), large pieces of rosewood from the Shinan shipwreck (right, photo by author).

Figure 13. The Makara water dragon motif is used on Maritime Silk Route commodities. Changsha bowl and Gongxin ewer of the Belitung Shipwreck (photo by author), dragon ewer of the Horyuji Collection (ColBase, https://colbase.nich.go.jp/), a silver bowl in a lotus shape with a motif of Makara (Courtesy of Hakutsuru Museum), and a painting of Panjikent (Tanaka and Maeda 1999).

Figure 14. Belitung shipwreck artifacts: a ceramic cup from Gongxian kilns (top left) and a golden cup (bottom left) (Chong and Murphy 2017).
Typological study of Songdian silver cups (Kuawayama 1977).

Figure 15. Location of the Chau Sha Citadel and the bay of Binh Son, historical anchorage (produced by author).

Figure 16. 8–9th century Chau Tan shipwreck of Southeast Asian trader with Tang Dynasty's exportation ceramics (above, photos by author) and Binh Chau No. 2 possibly built in Yuan-period China with exportation ceramics (bottom, courtesy of Institute of Archaeology and photo by Yuji Yamamoto).

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