

Maritime Archaeological Heritage in Binh Dinh and Phu Yen Provinces

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Abstract: Binh Dinh and Phu Yen are the two provinces with great potential for archaeological research in general and underwater archaeology in particular. The system of rivers and canals is fairly dense; along the coast, large estuaries and ancient trade ports are found, making it favourable for shipping, anchorage as well as commodity export-import activities. They also lie in the regional maritime trade routes with well-known seaports in history. The main types of archaeological relics such as ancient trade ports, sunken ships and shipyards are found sufficiently in the two provinces. In terms of date and origin, there is a diversity of the archaeological artefacts, including the ceramic, the stone, the iron and the wooden ones. Due to the present demands for people's life and local economic development, the cultural heritage is getting damaged more and more seriously.

Keywords: Heritage, underwater archaeology, trade port, trade, shipwreck.

Subject classification: Archaeology

1. Introduction

As recorded in “*Đại Nam nhất thống chí*” (Đại Nam Comprehensive Encyclopaedia, Đại Nam = Great [country in the] South, i.e. Vietnam), “Binh Dinh is a vast and fertile area, which used to be named as “*Tiểu Nong Nại*” (Little Nong Nai²), with a dense population and abundance of products, where boats and vehicles gathered and business was busy; it is surrounded by mountains outside and inside, so it is very convenient for both attack and defence. It is

a really important place in Ta Ky!³” [12, p.13]. In addition to historical, anthropological and folklore materials, the archaeological research findings show that Binh Dinh is an area that has a long history with the Sa Huynh culture and the location of Vijaya, a city-state in the ancient Kingdom of Champa. It played an important role in the regional maritime trade route, owing to some seaports famous in history such as Thi Nai, Nuoc Man and Quy Nhon.

Located south of Binh Dinh, Phu Yen has “a smaller size, but is also important

with dense population” [12, p.76]. It is considered one of the places of beautiful natural landscape with many wonderful, unique and attractive sites. The topographical and natural diversity with the mountains, forests, plains and coastal areas as well as rivers, lakes, lagoons and bays has created various ecosystems and particular features for the province. Furthermore, Phu Yen has a long cultural history and plays a significant role over the entire history of Vietnam. Its special cultural characteristic is the blend and acculturation of many cultures coming from different regions.

The underwater archaeology in particular and the maritime archaeology in general⁴ in Binh Dinh and Phu Yen have very great potential. They have a system of relatively dense rivers, of which some are big ones such as Con, Lai Giang, La Tinh, Ha Thanh, Da Rang, Ban Thach and Ky Lo; along the coast located a wide range of maritime gates, including Tam Quan, An Du, Ha Ra, De Gi and Quy Nhon, Tien Chau, Vung Lam, Da Dien seaports, Lang Mai bay, and Xuan Dai anchorage, where ships and boats frequently come in and out. These two provinces also lie in the regional maritime trade route with some seaports famous in history such as Thi Nai, Nuoc Man and Quy Nhon. Many traces of the cultural exchange with other civilisations from East Asia, South Asia and the West via the regional sea routes in the prehistoric and protohistoric periods have been discovered in the vestiges located along the coast of the two provinces. From the regional perspective, additionally, Champa and Viet people had

quite advanced skills in shipbuilding and sailing so as to conquer the sea and carry out maritime trade activities. Thus, the research objects for boat ethnography and experimentation as well as the anthropology of seafaring communities are extremely plentiful and diverse.

In the paper titled “Maritime Archaeology in Quang Nam and Quang Ngai Provinces” published in the first issue of the *Journal of Archaeology* of 2016 and the fifth issue of the *Vietnam Social Sciences Review* of the same year, we described our initial assessment of the potential for the maritime archaeology in Quang Nam and Quang Ngai. In the framework of this paper, we would like to introduce the types of the maritime archaeological vestiges and artefacts in Binh Dinh and Phu Yen, the two provinces with relatively distinctive geographical and political characteristics in Central Vietnam.

2. Vestiges related to the trade ports

Sea gates and anchorages are found along the coastal areas of Binh Dinh and Phu Yen, making it favourable for ships and boats to travel whereby the two provinces lie in the regional maritime trade route with some famous trade ports in history, including the following four ones:

The first one is the vestige related to Thi Nai trade port. A citadel located in the coast of Central Vietnam, which was very important in the history of the Kingdom of Champa, is Thi Nai citadel. According to historical documents, Thi Nai was an

ancient Champa city existing from the 10th to the 15th century. It was also a port located by the lagoon next to the sea, undertaking the functions as a military and a trade port as well.

Thi Nai citadel is mentioned in many historical documents such as “*Việt sử lược*” (*Abridged Chronicles of Viet*), “*Đại Việt sử ký toàn thư*” (*Complete Annals of Dai Viet*), “*Đại Nam nhất thống chí*” (*Dai Nam Comprehensive Encyclopaedia*), and “*Khâm định Việt sử thông giám cương mục*” (*Imperially Ordered Annotated Text Completely Reflecting the History of Viet*) with its name as Crivinaya according to the Sanskrit transliteration. In “*Việt sử lược*”, it is named as “*Thị Lị Bì Nại*”, while it is named as “*Tì Nĩ*” and “*Thị Nại*” port in “*Đại Việt sử ký toàn thư*” and “*Khâm định Việt sử thông giám cương mục*” respectively. In the Chinese historical documents under the Ming dynasty and earlier, it is mentioned as “*Thiết Tĩ Nại*”, “*Champa port*”, “*Tư Mi Liên*”, and “*Tân Châu port*”, etc. Western people named Thi Nai port under the Ly dynasty as “*Cri Banoy*”, but it was called afterwards as *Cri Bandy* or *Chopinai*, etc. [7, p.125].

Do Bang and Dinh Ba Hoa quite early raised similar opinions about the structure and location of Thi Nai citadel in their research papers. As identified by Do Bang, Thi Nai citadel was located in Binh Lam village at latitude 13°53' North and longitude 100°11' East, roughly 5km far from the lagoon and, to the opposite direction, 9km from the former Cach Thu seaport. It is located 22km due northwest of Do Ban citadel (Vijaya) and 24km due southeast of the Thap Doi (Twin Towers). In Dinh Ba Hoa's opinion, the

circumference of Thi Nai citadel was roughly 1.2km, and it was situated within the area of Phuoc Quang and Phuoc Hoa communes (Tuy Phuoc district, Binh Dinh province) [1, pp.383-385], [5, p.386]. During our investigation, we found part of Thi Nai citadel beneath the road in Phuoc Hoa commune. The citadel was built in the west side of the Con River, where some blocks of stone placed in the foundation of the citadel can be seen at present. Together with Thi Nai port, Thi Nai citadel was built for the purpose of protecting trade activities taking place off the coast of Vijaya and playing a role as an outpost for the defence of Cha Ban imperial city in the west against the attacks launched by other little kingdoms inside as well as neighbouring countries outside the Kingdom of Champa. The existence of Thi Nai citadel and the ancient Binh Lam tower in the lower section of the Con River next to the north of the present Thi Nai bay has provided us with fundamental understanding of the position of Thi Nai trade port. It is quite difficult to determine the precise location of Thi Nai trade port under the time of Vijaya. Yet, the location of Thi Nai trade port changed in accordance with the changes in the terrain and the current of the branches of the Con River as well.

Recently, when studying the position of Thi Nai port (Kingdom of Champa) in the East Asian trade system during the period from the 10th to the 15th century, Do Trung Giang argues that Thi Nai became an inter-regional centre, connecting big commercial centres in the region and the world [4, pp.285-314]. The position and role of Thi Nai trade port in history have been also

discussed by some researchers in their works. However, its size and structure as well as its operational mechanism have not been clearly defined yet.

The second one is the vestige related to Nuoc Man (Salty Water) trade port. After being left deserted for over two centuries, the former Thi Nai trade port was restored under the time of the Nguyen Lords, owing to the open policy that showed respect for foreign merchants. As a result, it rapidly became one of the busiest trade ports in Dang Trong, as the southern part of Vietnam was called at that time, and was renamed “Nuoc Man”.

It is also fairly difficult to define the exact location of Nuoc Man trade port, as there are not many traces of the trade port left on the ground. Until now, the trade port has not been studied much from the archaeological perspective. According to the historical documents, Nuoc Man trade port was built in the early 16th century, reaching its pinnacle of development in the 17th century and falling into ruins in the 18th century. It was situated in the plain area of the lower reach of the Con River. The investigations conducted in Phuoc Quang and Phuoc Hoa communes (Tuy Phuoc district, Binh Dinh province) have revealed many architectural traces such as Ong pagoda, Ba pagoda, the square well as well as the street names such as Hang Xao, Hang Ma, Hang Nhao, Hang Thuoc Bac, Hang Phao, Hang Nhang, Hang To Lua, Hang Gom and Hang Go, etc.⁵ in the local area. There are also artefacts such as Champa bricks, blocks of stone used to build embankments, Chinese and Japanese ceramic products, bronze coins from Chinese, Tay Son and Nguyen dynasties,

etc. exposed on the ground or found by local people when they were doing farming (Photos 1 - 2). They are the evidence for the thriving period of Nuoc Man trade port in the past. Thus, many researchers deemed that Nuoc Man trade port was located in that area. Hopefully, future fieldwork investigations and archaeological excavations will provide us with more precise and specific understanding of the trade port.

As regards Nuoc Man trade port, Do Bang is one of the first people who paid attention to studying it. In 1991, his paper titled “The Vestige of Nuoc Man (Binh Dinh)” was published in the publication *New Archaeological Discoveries in 1991* [2, p.193]. Later on, in the doctoral dissertation and the book titled *Seaport Town in Thuan Quang during the 17th and 18th Centuries*, he presented his remarks about Nuoc Man trade port in a systematic manner, and in the relations with other trade ports in the region of Thuan Quang (Hoi An and Thanh Ha). He did conduct investigations into the source of products, the trade relations/exchange and the traces of Nuoc Man trade port left available at present as well as its process of development and decline [3].

In her research work titled “*Nguyen Cochinchina: Southern Vietnam in the 17th and 18th Centuries*”, (“Nguyen” is the contemporary feudal Lords, and “Cochinchina” is a translated version of “Dang Trong”), Li Tana also provided us with some information on the management and operational mechanism of a seaport like Nuoc Man under the time of Nguyen Lords [8]. In 2002, with a folklore approach, Nguyen Xuan Nhan carried out

relatively comprehensive research works on the trade port [10].

In the paper *Nuoc Man Trade Port (Quy Nhon) of Dang Trong*, Le Dinh Phung also described the natural and social conditions that led to the establishment and development of Nuoc Man trade port. In his opinion, owing to being situated in the area of a wealthy district near Phu Yen, Binh Khang and Nha Trang, where goods came profusely from the highlands, Nuoc Man trade port played a significant role in the commercial exchange. He also emphasised the role of Hoa people and foreign merchants in the development of the trade port [11, pp.583-592].

In the monograph *Trade Ports in Central Vietnam and the Ceramic Road in Southwest Pacific during the Commercial Age (16th and 17th Centuries)*, Tran Duc Anh Son argues that Nuoc Man was an important trade port in Southeast Asia and one of the important trade stations for the ceramic road in the southwest of Pacific Ocean during the commercial age [13, pp.559-575].

In regard to research on Nuoc Man trade port from the archaeological perspective, Bui Minh Tri and Pham Quoc Quan published a research paper titled “Japanese Hizen Ceramics Found in Some Archaeological Sites” in the fourth issue of the *Journal of Archaeology* in 1994. In the paper, the authors argue that all the types of Hizen ceramic products that have been found in the archaeological sites in Thailand and Indonesia are likely to be found in Nuoc Man trade port, even though some of them have not been yet found in Thanh Ha and Hoi An trade ports [14, p.44].

What is very noteworthy is that, in 2006, Binh Dinh General Museum, which is the Museum of Binh Dinh province, carried out a test excavation in Thi Nai – Nuoc Man trade port. The excavated trench was made in the paddy field in Hang Xao, 50m due northeast of Ba Pagoda; it runs in the east – west direction with the size of 6m² (2m in width and 3m in length). The traces of a cooking stove and a brick wall running in the east – west direction were discovered. The artefacts found in the excavated trench include terracotta goods, stoneware, blue and white ceramics (from China), Japanese Hizen, Champa (Go Sanh), and Vietnamese ceramics, of which the stoneware made up the highest proportion, followed by those of the Chinese and Japanese ceramics. The findings of the test excavation was described in Dinh Ba Hoa’s paper titled “Identification of Thi Nai – Nuoc Man by Archaeological Materials” published in the first issue of the *Journal of Archaeology* in 2007. In the paper, the author asserts that during the period from the 12th to the 15th century, Thi Nai – Nuoc Man seaport was already a major trade port and contributed greatly towards the development of Vijaya, a political, economic and cultural centre of the Kingdom of Champa. Thi Nai seaport not only played the role as a trade connector between the mountainous and the coastal areas, but it also was a significant station in the regional maritime trade route. Under the time of the Nguyen Lords with the open policy that showed respect for foreign merchants, especially the Chinese and Japanese ones, the former Thi Nai

trade port renamed as “Nuoc Man” was restored and rapidly became one of the busy trade ports in Dang Trong, after being left deserted for over two centuries [6, pp.73-77].

In July 2016, the Institute of Archaeology in cooperation with Binh Dinh General Museum carried out the second test excavation in Nuoc Man trade port. Many valuable relics and artefacts were found, providing information for getting further understanding and evaluating the vestige. They include the traces of the foundation, embankment block of stones, pillar bases, stoves and a quite large amount of artefacts with various types. Initially, the excavating team deemed that the vestige dated back to the period from the 18th to the 19th century. The date of the artefacts ranges widely from the 16th and 17th to the 19th and 20th centuries, but they mainly date back to the 17th and 18th centuries. The discovery of a large amount of Chinese ceramics made under the Ming and the Qing dynasties and Japanese Hizen ceramics in the vestige demonstrates convincingly its role in the regional trade (Photos 3, 4, and 5).

The preliminary research works on Nuoc Man trade port have provided us with broad understanding of the role and position of the trade port in the general development process in Dang Trong during the 17th and the 18th centuries. Together with Hoi An and Thanh Ha, Nuoc Man was one of the most important trade ports, contributing part towards the trade prosperity in Dang Trong under the time of Nguyen Lords. It is therefore necessary to study Nuoc Man in the

linkage with other trade ports, which will help to highlight its role and position.

During the period of prosperity, Nuoc Man trade port was closely attached with the significant role played by Chinese and Western merchants. Nowadays, it still bears deeply the cultural traces of Chinese people, such as the Minh Huong village⁶, Ong (the [Esteemed] Man) pagoda (Guan Yu Temple), Ba (the Esteemed Woman/Lady) pagoda (Ma Zu Temple) and other cultural relics. Research works on the origin and the process of co-residence of Chinese community in this area surely will provide important understanding of the cultural exchange and trade of Nuoc Man port with other areas in the region.

Having very limited materials, we face a difficulty in giving precise interpretations on the location, size and development process of the trade port. Owing to the archaeological test excavations, some new understanding of the trade port has been preliminarily made. To get further and precise understanding of Nuoc Man trade port, however, it is essential to carry out more archaeological excavations on a large scale in the side of Thi Nai lagoon and strengthen inter- and multi-disciplinary research. Then, new significant understanding of the trade port will be certainly obtained.

The third one is the vestige related to Quy Nhon seaport town. At the beginning of the 19th century, when Ke Thu harbour was removed, Nuoc Man trade port fell into decline. Due to the geographical advantage for transport, business and anchorage, Quy Nhon became a place where merchants and goods arrived. Vietnamese and Chinese wealthy businessmen gradually came to

reside in Quy Nhon. As a result, markets were expanded and streets were built, attracting more foreign merchants, including Western ones, during the 19th century. At present, many architectural traces of the Quy Nhon trade port from the 19th century can be found, including the club-houses of [the Chinese coming from] Chaozhou, Guangdong and Fujian, and those club-houses named Quynh Phu and Ngu Bang; and Ba and Ong pagodas, etc. The products brought by Chinese merchants to Quy Nhon mainly included cotton and fibre to make fabric and clothes, green tea, ceramics, medicinal herbs, silk and so on. What they bought was mainly forestry products and rice. Quy Nhon trade port was also important, busy and prosperous during the French colonial time, [7, pp.124-160].

The fourth one is the vestige related to Vung Lam trade port. In 1832, a delegation of American traders came via the sea route to Vung Lam, asking for trade activities. The Nguyen dynasty sent a delegation of officials to meet and discuss with the American traders. Unfortunately, the trade relation was not set up, due to some disagreements. In 1896, the Bertin Trading Company from France sent a ship to the trade port to buy duck eggs to be sold in the world market. Vung Lam therefore was the first seaport to receive domestic and foreign merchant ships in Phu Yen.

3. Shipwrecks

Only one vestige of shipwreck has been identified so far in Binh Dinh and Phu Yen. It is Ha Ra shipwreck in the offshore area of Ha Ra sea gate (My Duc commune, Phu

My district, Binh Dinh province). Having been notified by local fishermen that some divers, who earned a living by catching lobsters, found some ancient ceramics and bronze coins offshore in My Duc commune, Binh Dinh General Museum and partners conducted an investigation. The antiques were found at latitude 14°20'540 North and longitude 109°11'837 East, near Hon Rua island off the coast of Ha Ra sea gate.

As the entire area under the investigation is a reef, they did not find any traces of the shipwreck. The antiques found in the area include coins and various ceramic goods such as plates, bowls, jars and vases, etc. covered and decorated with celadon, white or brown glaze. The bodies of the ceramic goods are opalescent, smooth and hard. Having been soaked in the sea water for a long time, they were coated with a layer of opalescent rust. The celadon-glazed big plate is 34cm in diameter with a splay mouth; the mouth is large, moulded into a gutter shape with a rolled and whittled rim. The inside of the plate is decorated with the embossed pattern of a descending dragon, of which the head is unclear but the body, the tail and four-claw feet are visible. The outside of the plate was shaped into a lotus petal. The base was made carefully, of which the outer side is slanting outwards and the inner part is quite vertical. The whole base is covered with glaze. In general, the celadon-glazed plate found in Ha Ra shipwreck looks rather similar to those found in the shipwreck in Binh Chau, Quang Ngai province (Photos 6-7).

The bowls are covered with a thick layer of smooth or crazed glaze. It has a curved splay shape. The lip splays obliquely

outwards. For some of them, the inside is decorated with the pattern of a string of flowers; whereas, the outside is not decorated with any patterns. The base was made carefully, of which the outer side is slightly vertical in the upper part and slanting outwards in the lower part; meanwhile, the inner part is quite vertical. The foot is cut flat. The whole base is covered outside with glaze or is not covered with glaze at all.

The jars have an opalescent, spongy ceramic body mixed with tiny grit. Some of them are covered with a thin layer of smooth or crazed light turquoise glaze; they are not decorated with any patterns. Both the inside and outside of the base are fairly vertical; the foot is cut slanting inwards first and then flat.

The vases have a tall shape with a short neck; the body is cylindrical; the shoulder slightly swells out first and then tapers towards the bottom. There are four ears on the shoulder. The contiguous part between the neck and the shoulder is decorated with three lines. The vase is not covered wholly with glaze; it is not glazed near the foot. The surface is brownish in colour and polished quite smoothly with some visible traces showing the technique of using a potter's wheel.

A large number of coins were found, stuck together in bulk. They are still in good conditions with clear inscriptions. Most of them are coins of the Song dynasty.

Our preliminary assessment is that the ceramics found in Ha Ra shipwreck mainly came from China, dating back to the 13th and 14th centuries. The shipwreck is identified to be located in the reef that runs

towards Hon Rua island, so the wreck was not buried in sand. Over many centuries, the wreck was devastated by storms, waves and ocean currents. As a result, no remnant of the wreck was found; a large number of ceramic products were damaged; and, some of them were swept away into the coral reef.

The first discovery of the shipwreck in Binh Dinh is very significant for the underwater archaeology in Vietnam, making contributions to identifying the maritime silk road, and affirming that Binh Dinh was a station on the regional north - south maritime route, where trade ships made landfall to do business in the past.

4. Vestige related to the shipyards and coastal seafaring communities

Observing from the regional perspective, one will see that Sa Huynh, Champa and Viet people living in the area of Binh Dinh and Phu Yen obtained quite advanced skills in shipbuilding and sailing so as to conquer the sea and carry out maritime trade activities. Nowadays, we can find communities of coastal fishermen in Tam Quan, De Gi, and Quy Nhon (Binh Dinh province), Xuan Hai, Song Cau, Tuy An, and Tuy Hoa (Phu Yen province) as well as shipyards in Tam Quan Bac, Hoai Nhon, Quy Nhon (Binh Dinh province), and Dong Tac (Tuy Hoa), which were famous for the boat-building in history. Thus, the research objects for boat ethnography and experimentation as well as the anthropology of seafaring communities are extremely plentiful and diverse.

5. Collections of artefacts

Apart from the artefacts found in the area of Ha Ra shipwreck, a small number of other underwater archaeological artefacts are also preserved in Binh Dinh Museum and Phu Yen Museum, including:

First, as regards to the terracotta and ceramic products, a collection of terracotta and ceramic artefacts found in Thi Nai lagoon is now preserved in Binh Dinh General Museum. They consist of both Viet and Champa ceramics with multiple types of bowls, plates, pots, jars, basins, vases and jugs, etc. dating back to different periods ranging from the 14th-15th centuries to the 18th-19th centuries. However, most of them date back to the 18th and 19th centuries.

The terracotta artefacts include the smooth and the rough ones with some types of products such as jars, vases, basins, and pots, the date of which ranges from the 17th to the 18th century. The terracotta pots are rough and short; the mouth splays out with a thick lip rolled round; the shoulder swells out first and then suddenly curves and tapers towards the bottom. The bottom is slightly convex. The neck, body, shoulder and bottom of the pots are decorated with the pattern of rope. The basins are also rough; the body splays out obliquely; whereas the mouth splays out horizontally with a rim rolled round. The neck part near the mouth was whittled into a concave shape to make the lip. The outside was rubbed but it still remains rough with the traces of the scroll bar. The inside was rubbed more carefully, but there are still traces of white sand. Flat is the bottom, the outside of which is quite

rough. The terracotta vases have a smooth surface with a tall shape, a short neck and a cylindrical body. The shoulder swells out slightly and then tapers towards the bottom. For some of them, there are four ears attached on the shoulder. The traces of shipworms sticking to the vases are quite visible both inside and outside. The vase surface is fairly smooth, but the traces of the coiling technique do remain. The bottom is concave towards the centre. The trace of vitrification can be seen in some vases.

The celadon, white, and white-blue glazed ceramics mainly include bowls, plates, jars, vases and vessels dating back to the 18th and 19th centuries and originating from Vietnam or China. For the celadon and white-blue glazed bowls, the layer of glaze is thin and smooth; the ceramic body is quite hard. The celadon-glazed bowls splay out upwards; they are not wholly covered with glaze. The technique of using a potter's wheel can be seen in the unglazed part. The foot is cut flat at the end; the outside looks slightly vertical; but the inside is slanting. They seem to be the Champa ceramic products dating approximately to the 15th century. For the white-blue glazed bowls, the outside is decorated with the pattern of a string of flowers. The inner surface is decorated with the pattern of blue lines. For some of them, the inner surface of the foot is decorated with stylised blue flowers; the technique of rolling or using non-stick tools is not found in some bowls. The foot is cut flat at the end with visible glaze-scratching traces; the outside is cut obliquely. It is decorated with two thin lines running parallel in the upper

part. The inside is cut quite vertically. The jars and vases show many traces of shipworm sticking; they have short shapes, vertical necks, and horizontal shoulders tapering slightly downwards; the body swells out in the upper part and swells in towards the bottom. The base is flat and the foot stands astride. The upper part of the shoulder next to the neck is decorated with an embossing strip of stylised nail-caps (Photos 8-9).

Second, metal goods. At present, a quite large number of cannons found in Thi Nai pond are preserved in Binh Dinh General Museum, showing the traces of the sea battle in 1801 between Tay Son naval force and the force of the Nguyen Lord. One of them is displayed inside the museum; two - in front of the entrance; and, seven - in the east yard of the museum. Three of them are made of bronze and other seven are made of pig-iron. Most of them were cast with a similar form to the Dutch cannons. The body has a tubular shape, of which the length ranges from 1.22m to 2.95m; the barrel is narrow with a diameter ranging from 10cm to 20cm; it is bigger in the breech and becomes smaller towards the muzzle (Photo 10). Embossing reinforce rings were cast along the body. The bronze cannons are decorated with the patterns of stylised flower strips, human faces or inscriptions (of words). The following words "KYLIANVS WECWART ME FECIT CAMPL... 164? (8?) are found on the back part of some cannons. The cannon breeches have the shape of a round knob. On both of the sides, there are two tubular trunnions used to fix the cannon to the rack. Some of

them are carved with the two Chinese characters of "三十" (thirty). The bronze cannons have handles with the shapes of a stylised young dragon, of which the head is big but the tail is small and curved into the tilde mark. The above-mentioned cannons have a lot of similarities to those preserved in Hue, which date back to the 17th and 18th centuries. They are historically valuable antiques that provide us with information on the military as well as the bronze/pig-iron casting technique of the contemporary times.

Third, wooden artefacts. In May 2016, during the investigation on underwater cultural heritage in a number of coastal provinces in Central Vietnam, we had an opportunity to have access to a relatively intact pirogue currently being kept at the Phu Yen Museum.

Some carpenters from Tay Nguyen, or the Central Highlands, say that the pirogue was made from the wood of *lagerstroemia angustifolia*, which is nice, water-resistant and, therefore, free from cracking or splitting, or getting musty when coming into contact with water. Nowadays, according to local people who have knowledge and experiences of wood and forests, those who exploit the wood of the tree often sell it to south western provinces for the making of boats.

The pirogue found is 11.35m long with the width of 47-48 cm measured at the widest place of its body, and the height of 20-27cm. The inside of the boat is 40cm in width and 4.6-16cm in depth with 10 pairs of sockets being placed symmetrically on the two opposing sides of the boat. These sockets are used for

placement of cross-bars, dividing the inside into 9 cavities. The central cavity is 107.5cm in length while the remaining ones on the two sides are 93-94.5cm long. Local people say that the cross-bars are bow-shaped and were broken by the locals while the pirogue was being resurfaced from the sea. The sockets used to place cross-bars are shaped in the form of a reverse balanced trapezoid with the top being deeply carved and the bottom more shallowly carved. Its dimensions are around 3x4 cm with the depth of 0.2cm-1cm. On the two sides of the inside, there is a system of 44 pairs of horizontal cut-through latch holes and 4 pairs of vertical latch holes at the two ends of the boat. These holes have an average diameter of 1-1.2cm. The distances between pairs of horizontal latch holes are 30.5cm at the centre of the boat, 22-29cm in the middle area, 23-23.5 for most of the areas and 16-20cm at the two ends of the pirogue. The distance between the two pairs of standing latch holes at its two ends is 36 cm. At the two prows of the pirogue, there is also a system of latch holes with three pairs of vertical ones and two pairs of diagonal ones. These holes also have diameters of around 1cm. Upon several standing latch holes and horizontal ones, there are wedge bolts in round cylinder shape which are 0.9cm-1cm in diameter, 3.5cm in length and sharpened on one end (Photos 12-14).

The pirogue is a form of traditional boat with a long history. Up to now, pirogues are still used in many places in the world. In Vietnam, they are still popular in areas like the Central Highlands and the north western region, etc.

The design and size of this pirogue is completely different from those of the two ethnic groups of Gia Rai and Ba Na whom we have come into contact with in the two provinces of Kon Tum and Gia Lai, upstream of the Ba river. The pirogues here are relatively similar in design and size. The longest one is around more than 7m in length with the largest width of 79cm while the shortest is 6m in length with the largest width of 47cm. The bodies of the pirogues expand in width with the two ends tilting upwards. Each of them can accommodate 1-2 oarsmen with paddles of 1.1-1.2m in length. Their use is for catching sea products or transporting people and goods across and along rivers.

The pirogue currently being stored at the Phu Yen Museum has an elongated design. Its shape allows it to reduce the resistance of the flow so that it can move fast and stably on the water surface. The boat can withstand waves.

The sample of the wood used to make the pirogue was studied with the C14 dating method at the centre of nuclear techniques in Ho Chi Minh City, showing that it dates back to 890 ± 40 BP, which is the equivalent of the 11th-12th century. From the characteristics and remarks listed above, we believe that the pirogue preserved at the Phu Yen Museum is an artefact of high historical and cultural value. It was meticulously and perfectly made and is being preserved in a relatively intact state. Given the existing data, the details on its owner remain an unanswered question. Hopefully, in the future, with new sources of data, the answer to the issue will slowly reveal itself.

6. Conclusion

The two provinces of Binh Dinh and Phu Yen possess great potential in underwater archaeology in particular and maritime archaeology in general. The system of rivers and canals in these two provinces is fairly dense. Along the coast, there are many estuaries and areas which facilitate the coming in and out of ships and boats. The area also lies in the same marine trade routes in the region with famous commercial ports in history. Here, there is a full range of the main types of relics of maritime archaeology such as ancient ports, shipwrecks, shipyards and seafaring communities with a multimillennial history of development.

However, like many other developing regions in the world, the maritime cultural heritage here has been facing major challenges. Real life conditions and the development of the local economy are gradually harming the source of cultural heritage. Examples are the stealing of antiquities at shipwreck sites, the invasion into the space of ancient commercial ports and the narrowing and erosion of traditional boat-making villages, etc. Consequently, the systematic study of underwater archaeological vestiges, submerged sites and their historical association with those on land in this area in a larger spatial and temporal scale is particularly urgent and necessary in providing the scientific grounds towards a proposal of solutions for the protection, preservation and promotion of their values. In so doing, information on the past hidden in this area would be better revealed.

Notes

² Nong Nai was another name, used by the Chinese Qing dynasty, of Gia Dinh. The author of the book implied that the importance and prosperity of Binh Dinh were comparable to those of Gia Dinh.

³ The contemporary name of the area from the current Binh Dinh to Binh Thuan provinces.

⁴ For more information on the research subjects of underwater and maritime archaeology, please refer to Colin Renfrew, Paul Bahn (1994), *Archaeology: Theories, Methods and Practice*, Thames and Hudson Ltd, London; Ian Shaw and Robert Jameson (Ed.) (2002), *A Dictionary of Archaeology*, Blackwell Publishing House; Keith Muckelroy (1978), *Maritime Archaeology*, Cambridge University Press (an e-book from book.google.com); Richard A. Gould (2000), *Archaeology and the Social History of Ships*, Cambridge University Press.

⁵ The streets are named after the goods on sale there; for example: Hang Thuoc Bac = Chinese Medicine St., Hang Phao = Firecrackers St., Hang Nhang = Incense St., Hang To Lua = Silk St., Hang Gom = Ceramics St., Hang Go = Wood [Products] St., and so on. Hang Nhao and Hang Xao were the streets where earthen statues and various items, mostly rice, were sold respectively.

⁶ Minh Huong, or Minhxiang in Chinese, meaning the Ming native land/village, is the place of residence of Chinese people of the Ming dynasty, who fled the Qing dynasty to Vietnam.

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Illustrated with Photos Taken by the Author



Photo 1: Ong Pagoda



Photo 2: Ba Pagoda



Photo 3: Ngoi Bridge



Photo 4: Traces of a Cooking Spot



Photo 5: Chinese Ceramics of the 17th Century



Photo 6: Japanese Hizen Ceramics



Photos 7-8: Ceramics from the Ha Ra Shipwreck



Photos 9-10: Ceramics Found in Thi Nai Pond



Photo 11: Cannons at Binh Dinh General Museum



Photos 12-13-14: Pirogue Preserved at Phu Yen Museum