

# **Shipwreck Site and Earthenware Vessels in the Philippines: Earthenware vessels of the Pandanan Shipwreck Site**

Kazuhiko Tanaka and Eusebio Z. Dizon

## ***Abstract***

Eighteen shipwreck sites had been identified and researched in the Philippines by 2003 (Dizon 2003). The main goods of the cargos of these ships were porcelain wares and stoneware jars which had been produced in kiln sites in China and Mainland Southeast Asia such as Vietnam, Thailand and Myanmar (Alba 1993; Crick 1996; Diem 1996; Desroches 1996; Salcedo 1993; Valdes 1993). Many scholars have been interested in these porcelain wares and stoneware jars.

Beside these porcelain wares and stoneware jars, earthenware vessels were also found in the shipwreck sites. However, only a few scholars have paid attention to earthenware vessels found in shipwreck sites. One of whom is Amalia de la Torre (1993; 1996), she conducted the study of earthenware vessels found in the San Diego Shipwreck Site. Earthenware vessels found in the shipwreck sites are often not goods for trading or bartering but for daily utensils of the people on a voyage (de la Torre 1993; 1996).

The Pandanan Shipwreck Site is one of the rare shipwreck sites dated around the middle of the 15th century, its rarity is presumably because the Chinese imperial court totally banned private trading during this period (Sakuma 1989). Allison Diem (1996) has already conducted the study of glazed ceramics such as porcelain wares and stoneware jars found in the site and identified as wares produced in kiln sites in central Vietnam (Binh Dinh Province). However, she did not conduct the study of the unglazed earthenware vessels. Consequently there is no significant documentation of the earthenware vessels excavated in the Pandanan Shipwreck Site.

The writer believes that earthenware vessels of the shipwreck sites are also very important artifacts which sometimes indicate daily lives of the people on board and the possible route of the ship and the trade, even though they are easily neglected. In this article, the writer will point out the similarity of the forms of globular pots with a spout excavated in the Pandanan Wreck Site, the Lena Shoal Wreck Site and the Calatagan Sites (the terrestrial sites) in Batangas Province (Tanaka 2005). On the basis of this similarity, the sailing route of the Pandanan ship will be discussed in this article.

## ***Introduction***

A number of scholars have been interested in and studied porcelain and stonewares excavated in shipwreck sites (Alba 1993; Crick 1996; Diem 1996; Desroches 1996; Salcedo 1993; Valdes 1993). This is because porcelain and stonewares are the main surviving artifacts among the cargoes.

Meanwhile, earthenware, which has also been excavated in shipwreck sites, has received less attention. In the Philippines, only de la Torre (1993, 1996) conducted the study on such kind of artifacts excavated in shipwreck sites. Earthenwares excavated in a shipwreck site have a different character from porcelain and stonewares. In many cases, earthenwares were employed by crew members and passengers for daily lives use and passengers (de la Torre 1993; de la Torre 1996), whereas the latter are the goods for trades.

Furthermore we would like to consider the possible routes of the ship on the basis of earthenwares excavated in the Pandanan Shipwreck Site.

### ***Location of the Pandanan Shipwreck Site (Figure 1)***

The western part of the Philippines is composed of Palawan Island and adjacent small islands. This island stretches in an orientation from northeast to southwest. The southernmost part of it faces the northernmost part of Borneo, although there are several small islands between these large islands. The strait between these large islands becomes a passage from the South China Sea to the Sulu Sea and vice versa.

The Pandanan Island is located near the southern tip of Palawan Island (Figure 1). It is 9.6km long and 4km wide quadrangular small island. The shipwreck site is located about 250 meters off the northeast coast of the island (Dizon 1996:64).



Figure 1 Pandan Shipwreck Sites and related Sites

Figure 1. Large scale location of Pandanan shipwreck site and related sites.

### ***Discovery and Archaeological Research of the Pandanan Shipwreck Site***

The Ecofarm Resource Inc. runs a pearl farm in the sea around Pandanan Island. Pearls are cultured in a quadrangular basket the inside of which are divided into parts. The baskets are tied to a rope in the sea. One day in 1993, Mr. Gordirilla, who works in the Ecofarm Resource Inc., noticed that one basket was missing (Honasan 1996:14). He looked for it at the bottom of the sea around

the farm. During his search of the pearl basket, he accidentally found the shipwreck site. It is now known as the Pandanan Shipwreck Site (Honasan 1996:14). He informed the manager of the farm, Mr. Efren T. Anies about the shipwreck. Then Mr. Efren T. Anies informed the accidental discovery of the shipwreck site to the National Museum of the Philippines on June 9, 1993. The National Museum conducted the archaeological excavation of the site from Feb 17 to May 31, 1993 (Dizon 1996:64).

### ***The Wreck of the Pandanan Site***

The wreck was found at the bottom of a coral cliff, covered with sand and mud (Dizon 1996:70). The remaining portion of the ship is estimated to be about one-fourth of the whole body of the ship. The size of the ship was estimated to be 25 to 30 meters long and about six to eight meters wide. It was pointed out that there were the typical holes in the divisions of the bulkhead for the purpose of letting water pass through it to be eventually pumped out. Two possible reasons were presented why only one-fourth of the body of the ship had remained. One is the infestation of the exposed wood by the tropical sea worms; and the other is the rapid movement of the under-water current (Dizon 1996:70). Eusebio Dizon (1996:70) identified the origin of the ship as possibly from Vietnam or southern China from its cargo as well as from particular details of ship construction. Dizon also pointed out that 70% of the artifacts found from this site were from present-day Vietnam (Dizon 1996:70).

### ***Artifacts found in the Pandanan Shipwreck Site***

There were 4, 722 artifacts found in the Pandanan Wreck Site. These are divided into six categories on the basis of kind of artifacts: earthenwares, porcelain, metals, coins, glass artifacts and stone tools. In this section, the artifacts except earthenwares are summarized.

#### **Chinese porcelain and stonewares**

Chinese Porcelain are composed of blue-and-white wares and white wares produced in Jing-de-zhen kiln and celadon wares produced in Longquan kiln. The stonewares were produced in kilns in Fuchien Province and Guangdong Province in southern China. The blue-and-white wares are composed of saucers, bowls, large bowls and small jarlets. White wares are two pieces of gourd-shaped pouring vessels, one of them has dots of an iron pigment. Celadon wares are composed of dishes with a floral flaring rim, bowls with lotus design, saucers and stemmed cups. The stonewares produced in Fuchien and Guangdong Provinces are brown glazed six eared jars with a dragon design.

#### **Porcelain of northern Vietnam**

Porcelain of northern Vietnam are blue-and-white wares produced in Chu Dau kiln in northern Vietnam (Dizon 1996:99). These are composed of bowls, dishes or saucers, pots, jarlets, covered boxes and water droppers.

### **Porcelain and stonewares of central Vietnam**

Porcelain and stonewares of central Vietnam were thought to have been produced in the Go Sanh kiln in Binh Dinh Province in Central Vietnam. These are composed of celadon saucers or dishes with an unglazed ring portion at the inside.

### **Porcelain and stonewares of Thailand**

Porcelain of Thailand is composed of a large bowl with a fish design drawn in iron pigment inside. Stoneware of Thailand is a blackish brown glazed four-eared large jar. The former was produced in the Sukhothai kiln, the latter was produced in the kilns along the Noi River.

### **Metal artifacts**

Metal artifacts are divided into bronze artifacts and iron tools. Bronze artifacts are composed of two small canons, one lamp, one scale balance, one mirror, one covered box, one disc, one fish hook, one ferrule and five gongs. Iron tools are composed of one sword, one knife and over 60 cauldrons (Dizon 1996:68).

### **Coins**

Several Chinese coins were found in the wreck site. One of them was identified as a coin which had been made during the rule of Emperor Yung Le (reign:1402~24)(Dizon 1996:66).

### **Glass artifacts**

Thousands of glass beads were found in a storage jar (Dizon 1996:66; Cayron 2006).

### **Stone tools**

Stone tools were composed of 21 grinding stones. These stones were either used for honing metal blades or for food processing.

The main cargos of porcelain and stonewares are the products in Vietnam. Dizon mentioned that about 70 % of artifacts had been produced in present-day Vietnam (Dizon 1996:66).

### ***Date of Sinking of the Pandanan Ship***

Dizon (1996:72) thinks that the date of sinking of the ship is at the middle of 15<sup>th</sup> century, because most of the ceramic cargo belongs to this period, although porcelain found in the site ranges from the Yuan Dynasty (1271~1368) to the Ming Dynasty (1368~1644).

Two Japanese scholars also mentioned the date of the ship sinking. Kenichi Morimura (1996) thought that it is from the middle of the 15<sup>th</sup> century to the late 15<sup>th</sup> century on the basis of dates of tombs in China with associated Chinese porcelain similar to the porcelain found in the wreck site. These are a celadon dish with a flaring rim made in Longquan kiln and a small jarlet with a

peony design produced in Jing-de-zhen kiln. The former was found in a tomb with a gravestone with an inscribed date of 1444 (Morimura1996:112). This is the tomb of Wei Yuan and located Yongxiu County in Jingxi Province. The specimen similar to the latter in shape and design was found in a tomb with an inscribed gravestone dated to 1437 (Morimura1966:112). This is the tomb of Zhu Panshi and located in Xinjian County in Jiangxi Province.

Ko Mukai (2003:96-98) sequenced the black glazed four-eared jars made in Thailand, and from this, thought that the Pandanan ship was contemporaneous to the wreck of the Royal Nanhai found off the eastern shore of the Malay Peninsula, the wreck found off the Ko Khram Island in the Gulf of Thailand and the Feature no. SK01 at the Kyonouchi area in the Shuri Castle Site in Okinawa, Japan. He thought that all of them belonged to the middle of the 15<sup>th</sup> century (Mukai 2003:96-98).

### ***Earthenwares of the Pandanan Shipwreck Site***

These are 301 earthenware vessels and fragments found in this site. The earthenwares of the Pandanan Shipwreck Site are divided into five categories by type: pot, lid, jarlet, pouring vessel and stove.

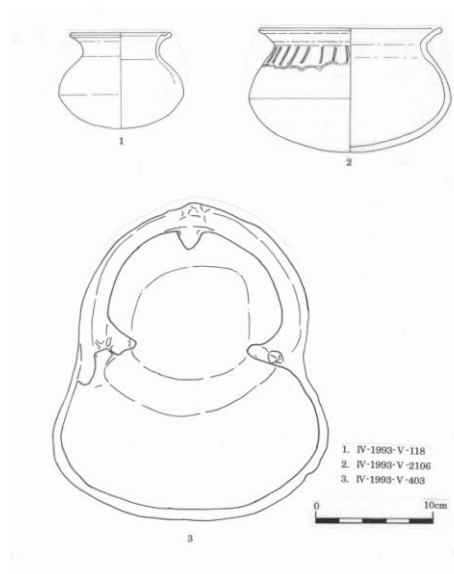


Figure 2. Earthenware Jarlet (1), Pot (2), Stove (Type 1)(3) of the Pandanan Shipwreck Site

Figure 2. Earthenware Jarlet (1), Pot (2), Stove (Type 1)(3) of the Pandanan shipwreck site.

### **Pots**

There are four pieces of whole and restorable pots. One pot has a decoration and the other three pots are plain.

The decorated one has a carination at the middle of the body and an out-turned rim. The rim diameter is 15.6 centimeters. The height is 10.8 centimeters. The maximum width of the body is 17.2 centimeters. The decoration was executed

from the neck to the upper part of the body by a pronged tool. Two parallel vertical lines are incised from the neck to the upper part of the body with about 7 to 8 millimeters intervals. The lower ends of these incised parallel vertical lines are bordered by an incised horizontal wavy line. Some parts from the rim to the upper portion of the body were covered with soot, indicating this pot was used for cooking on the ship.

One of plain pots has polishing marks on the surface of the bottom. They were executed in only one direction all over the surface of the bottom. The pot has an out-turned rim. The rim diameter is about 13.7 centimeters. The height is 8.2 centimeters. The width of the bottom is 13.2 centimeters. This pot is a relatively small one. The outer surface of it, except the bottom, is covered with soot.

The other plain pot with accession no. 3684 is a relative large one. It has an out-turned rim and a rounded bottom. The rim diameter is about 17.1 centimeters. The maximum width of the body is about 17.7 centimeters. The height is around 10.8 centimeters. The outer surface from the rim to the curved portion of the body is covered with soot.

Another plain pot with an accession no. 3044 has also out-turned rim and a rounded bottom. The rim diameter is 14.8 centimeters. The maximum width of the body is 19 centimeters. The height is 14.5 centimeters. The outer surface from the rim to the angle-body is partially covered with soot. The bottom is also partially covered with soot.

## **Lids**

There are three whole lids. All of them have a similar shape. They have a concave top portion and a convex bottom portion. They have a small knob at the center of the concave top. Two of them have a knob with a flattened top of the knob, the other one has a knob with a rounded top. There are two sizes. One is 11.8 centimeters to 11.9 centimeters in diameter. The height is 2.6 to 2.7 centimeter. The other is 14.3 centimeter in diameter. The height is 3.0 centimeters. Three of them have a lot of reddish brown small particles in the paste. These three lids are thought to have been made in Thailand on the basis of the characteristics of the shape.

## **Jarlet**

There is one piece of jarlet. It has an out-turned short rim, a short neck and an ellipsoidal body. The rim diameter is 6.8 centimeters. The maximum width of the body is 10 centimeters. The height is 6.5 centimeters. The joining trace of a neck part and a body part is evident. There are also horizontal traces of wiping at the rim and the neck.

## **Pouring vessels**

There are two pieces of pouring vessels. One is almost a complete one. The other lacks the rim and the neck. Only the body, the bottom and a lower portion of a spout remained.

The almost complete one has an out-turned short rim, a short neck and a spherical body. The outer surface of the bottom has a dimple at the center. There is a horizontal applique ridge at the upper portion of the body. The bottom is well polished. This pouring vessel is very similar to one of the pouring vessels (KT Slipped and Polished, Form D-I-C) excavated in the Calatagan Site in Batangas Province in Luzon by Fox (Main and Fox 1982:27).

Another pouring vessel has only the body, the bottom and the lower portion of the spout. The shape of the body is ellipsoidal. The upper part of the body is relatively flat. There is a distinctive shoulder. The center portion of the top of the body is a little bit higher than the outside part. Then there is a 3.1 centimeters diameter hole. It is thought that the neck portion was joined at this portion originally. However, that portion is already missing. The outside of the bottom is slightly hollow and has a concave shape. The inside of the bottom has a convex shape. The maximum diameter of the body is about 16 centimeters. The height of the remaining body and bottom is about 9.7 centimeters. The diameter of the broken hole at the center of the upper part of the body is about 3.1 centimeters. The width of the spout is 7.3 centimeters at the joining portion to the body.

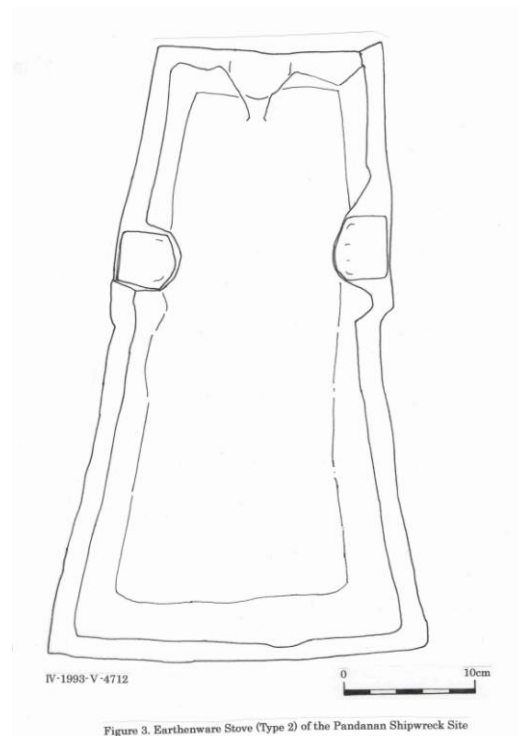


Figure 3. Earthenware Stove (Type 2) of the Pandanan shipwreck site.

## Stoves

A stove has two sections. One is used to put the pot on top of it and the lighted firewood are placed underneath. The long end of the firewood stretches to the other section where the cook can handle the firewood to keep the fire under control.

The first type (Type 1) (Plate 1:1~3):  
 The shape of the part for putting firewood of the first type has a shape like a fan. The adjacent part for burning firewood is a half-cut cylindrical shape. Three small cleats are put on the top of this cylindrical shaped wall. The ringfoot is attached to the bottom. The total shape of the stove of this type is similar to the stove excavated in Sta Ana Site in Manila (Fox and Legaspi 1977:Figure 8).

Type 1



1 Top View

2 Bottom View

3 Side View

Type 2



4 Top View

5 Bottom View

6 Front View

Type 3



7 Top View

8 Bottom View

9 Front View

Plate 1 Earthenware Stoves of the Pandanan Shipwreck Site  
 (Type 1:1~3, Type 2:4~6, Type 3:7~9)

Figure 4. Earthenware Stoves of the Pandanan shipwreck site.

The second type (Type 2)(Plate 1:4~6):  
 The shape of the part for putting firewood of the second type is quadrangular. This part is edged with low walls.

The third type (Type 3)(Plate 1:7~9):  
 The shape of the part for putting firewood of the third type is also quadrangular. This part is also edged with low walls. Meanwhile, the part for burning firewood is a cylindrical shape with an quadrangular large cut-out at the front part. Therefore, the top of this part is like a ring. Three small cleats are attached on this ring.



## ***Discussions***

The following things are already revealed on the observation of earthenwares excavated in the Pandanan Shipwreck Site.

- As mentioned before by Dizon (1996:67), there is a pouring vessel (a globular pot) similar to the pouring vessel (the globular pot) excavated in the Calatagan Sites in Batangas Province in Luzon (Main and Fox 1982:Figure 72); at least three kinds of stoves; and pots were used for cooking because all of them have soot on the outer surface.
- One type of stove, whose shape of the section for handling the firewood to keep the fire under control is like a fan, is similar to the stove excavated in Sta Ana Site in Manila (Fox and Legaspi 1977:Figure 8).
- Two other types of stoves have the quadrangular shapes at the section for handling the firewood to keep the fire under control. Stoves with the section for handling the firewood of quadrangular shape were excavated in the Butuan Sites in northeastern Mindanao (Cembrano 1998:Figure 10).
- There is the pot with an incised design whose design elements are similar to the those of the pot excavated in the Calatagan Sites in Batangas Province in Luzon (Main and Fox 1982:Figure 84-(b)).
- There is a pot whose polishing marks on the bottom is similar to the pot excavated in the Calatagan Sites in Batangas Province in Luzon (Main and Fox 1982:Figure 5:Type III of Base Polish).

## ***Concluding Remarks***

There are several earthenwares excavated in the Pandanan Shipwreck Site, which are similar to the earthenwares excavated in the Calatagan Sites in Batangas Province, Luzon Island: a pouring vessel, a pot with incised design and a pot with polishing marks at the bottom. In addition, there is a stove whose shape is similar to the stove excavated in Sta Ana Site in Manila. The Calatagan sites in Batangas Province and the Sta Ana Site in Manila revealed the stoves similar to the stove of Type 1 of the Pandanan Shipwreck Site. However, these sites did not revealed the quadrangular stoves like the stove of Type 2, which is similar to the stove found in the Butuan Sites in Northeastern Mindanao. Meanwhile, the Butuan sites did not revealed the stove of Type 1. It seems that the stoves have the local characteristics. In addition, the Calatagan Sites revealed celadon dishes (Fox 1959: Plate 90, 91) made in Binh Dinh Province which were one of main cargoes of the Pandanan Ship. This fact suggests one possibility of the route of the ship. That is the ship had passed near Batangas area before the ship sank off the Pandanan Island, since Dizon's view via south route (Dizon 1996:70) is still another strong option. Further archaeological excavations of the terrestrial sites in Southern Palawan is awaited. Until then, it is also probable that the Pandanan ship might had been trading too in Calatagan and Sta Ana and even Butuan.

## ***Bibliography***

Alba, L. A.,	"A Preliminary Survey of the Storage Jars", in (eds.) Cynthia O.
--------------	--

1993	Valdes and Allison Diem, <i>Saga of the San Diego</i> , pp.43-44.
Aoyagi, Y. and Hasebe, G., (eds.), 2002	Champa Ceramics Production and Trade-Excavation Report of the Go Sanh Kiln Sites in Central Vietnam-, The Study Group of the Go Sanh Klin Sites in Central Vietnam, Japan and Vietnam.
Cayron, J.G., 2006	Stinging the Past: an archaeological understanding of early Southeast Asian glass bead trade, The University of the Philippine Press, Diliman.
Cembrano, M.R., 1998	Patterns of the Past; The ethnoarchaeology of Butuan. National Museum of the Philippines, Manila.
Crick, M., 1996	"Typology: Porcelains and Ceramics" in <i>Lost at Sea-The strange route of the Lena Shoal Junk-</i> ,pp.98-233, Periplus Publishing London Ltd, London.
de la Torre, A., 1993	"Potteries of the Period –A Preliminary Analysis of Potteries Retrieved from the San Diego Shipwreck", in (eds.) Cynthia O. Valdes and Allison Diem, <i>Saga of the San Diego</i> , pp.31-37, Concerned Citizens for the National Museum, Inc., Manila.
de la Torre, A., 1996	"Terra Cotta Pieces", in (eds.) Jean-Paul Desroches, Gabriel Casal and Franck Goddio, <i>Treasures of the San Diego</i> , pp.252-255, Association Française d'Action Artistique, Foundation of Elf and Elf Aquitaine International Foundation, Inc, Paris and New York.
Diem, A. J., 1996	"Relics of a Lost Kingdom-Ceramics from the Asian Maritime Trade-" in (ed.) Christophe Loviny, <i>The Pearl Road: Tales of Treasure Ships in the Philippines</i> , pp.95-105, Asiatype, Inc, Makati.
Dizon, E. Z., 1996	"Anatomy of a Shpiwreck: Archaeology of the15th-century Pandanan Shipwreck", in (ed.) Christophe Loviny, <i>The Pearl Road: Tales of Treasure Ships in the Philippines</i> , pp.62-93, Asiatype, Inc, Makati.
Dizon, E.Z., 2003	"Underwater and Maritime Archaeology in the Philippines", in <i>Philippine Quarterly of Culture &amp; Society</i> , Vol.31, pp.1-25.
Desroches, J., 1996	"The Porcelains", in (eds.) Jean-Paul Desroches, Gabriel Casal and Franck Goddio, <i>Treasures of the San Diego</i> , pp.300-359. Association Française d'Action Artistique, Foundation of Elf and Elf Aquitaine International Foundation Inc, Paris and New York.
Fox, R. B., 1959	"The Calatagan Excavations: Two 15th Century Burial Sites in Batangas Philippines", in <i>Philippine Studies</i> Vol. 7, No.3, pp.1-74.
Fox, R. B. and Legaspi, A., 1977	<i>Excavations at Santa Ana</i> , National Museum of thePhilippines, Manila.
Guy, J.,	Ceramic Traditions of South-East Asia, Oxford University

1989	Press.
Honasan, A.B., 1996	"The Pandanan Junk: The Wreck of a Fifteenth Century Junk is Found by Chance in a Pearl Farm off Pandanan Island", in (ed.) Christophe Loviny, <i>The Pearl Road: Tales of Treasure Ships in the Philippines</i> , pp.13-23, Asiatype, Inc, Makati.
Loviny, C., (ed.) 1996	The Pearl Road: Tales of Treasure Ships in the Philippines, Asiatype, Inc, Makati.
Main, D. and Fox, R.B., 1982	The Calatagan Earthenwares: A Description of Pottery Complexes Excavated in Batangas Province, Philippines, Monograph No.5, National Museum of the Philippines, Manila.
Miksik, J. N., (ed.) 2009	<i>Southeast Asian Ceramics: New Light on Old Pottery</i> , Southeast Asian Ceramic Society, Singapore.
Morimura, K., 1996	"Ceramics excavated in the Shipwreck off the Pandanan Island, Philippines", (in Japanese) in <i>Trade Ceramic Studies</i> , No.16, pp.111-125.
Mukai, K., 2003	"Classification and Dating of Black Glazed Four Eared Jars of Thailand", (in Japanese) in <i>Trade Ceramic Studies</i> , No.23, pp.90-105.
Rice, P. M., 1987	<i>Pottery Analysis: A source book</i> , The University of Chicago Press, Chicago and London.
Sakuma, S., 1989	"Prohibition of Overseas Trade and its Influence of International Relations in the Early Reign of the Ming Dynasty", (in Japanese with English summary) in <i>Journal of East-West Maritime Relations</i> , vol. 1, pp.31-46.
Salcedo, C.G., 1993	"The Ceramic Cargo" in (eds.) Cynthia O. Valdes and Allison Diem, <i>Saga of the San Diego</i> , pp.29-30.
Tanaka, K., 2005	"Wreck Sites and Their Pottery in the Philippines: Focusing on the Sites from the Middle of the 15 <sup>th</sup> Century to the End of the 16 <sup>th</sup> Century", (in Japanese with English summary) in <i>The Journal of Underwater Archaeological Studies</i> No.1, pp.17-53.
Tang, B. H., 1999	<i>Chu Dau Ceramics</i> , The Museum of Haiduong Province Kinh Books Ltd, Vietnam.
Valdes, C. O., 1993	"Jars on Board" in (eds.) Cynthia O. Valdes and Allison Diem, <i>Saga of the San Diego</i> , pp.38-42