The Old World and New World Connections to the Porcelain-Inlaid Earthenware Found in the Philippines

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Introduction

The pottery assemblage from the 2005 Archaeological Impact Assessment (AIA) excavation conducted at Fr. Blanco's Garden, San Agustin Museum compound, Intramuros, Manila yielded local earthenware and foreign ceramics as expected. Yet out of nearly two crates of pottery or nearly three thousand potsherds recovered, two sherds that were inlaid with bits of porcelain stood out from the pottery assemblage. Both excavated from Pit 2, coming from contexts 70 and 99 with accession numbers NCR-92-J-1164 and NCR-92-J-1165 respectively **(Plate 1 and Figure 1)**, these two sherds are presumably from vessels of the "porcelain-inlaid earthenware" type of pottery, called as such because of the bits of porcelain are decoratively set on the surface of the earthenware.

At first glance, the inlays had looked like encrustations of lime as a result of taphonomic processes since the sherds were found in a mix of construction material or perhaps the white bits were impurities in the fabric of the earthenware sherds – mere inclusions in the clay that were a little too big to be missed. Upon closer inspection, what at first had looked like non-plastic inclusions are on some parts glazed, which is easily distinguishable by the naked eye. The samples were

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brought to the National Museum for further inspection and it turned out to be "blue and white porcelain inlaid earthenware" as dubbed in *Treasures of the San Diego* (De la Torre 1993). Indeed, the bits of porcelain embedded on the surface of the earthenware were decorative in nature as seen in comparison with photographs of whole vessels and at the outset in the pattern the inlays have created as evident in the sherds. The description of these sherds is to be further discussed in this paper.

Not much has been written about this type of pottery. In the Philippines, there are only three known written sources that delve into the porcelain-inlaid earthenware – two were written by De la Torre (1993, 1996) and one by Tanaka (2005). The most documented example of this type of earthenware is the porcelain-inlaid earthenware collection from the San Diego shipwreck (dela Torre 1993). A typology is presented, describing the forms and possible usage of these vessels. In December 2005, Dr. Kazuhiko Tanaka of Sophia University in Japan included the porcelain-inlaid earthenware when he talked about the porcelain cargo of 15th to 16th century shipwrecks in the Philippines. Dr. Tanaka has worked closely with the Archaeology Division of the National Museum of the Philippines, especially with Ms. dela Torre who specializes in pottery.

Information on earthenware inlaid with bits of porcelain is scant. As an exercise, the Internet search engine was used with the keywords "inlaid earthenware." There were some hits but none from the Philippines. Apparently, there are two other types of inlaid earthenwares – 1) the feldspar-inlaid redware found in Mexico, Florida, Panama and the Dominican Republic (also Kenya as we would later find out), and 2) the quartz-inlaid earthenware which is also called the Stoned Pottery of Nisa in Portugal. The feldspar-inlaid redware were recovered from Spanish Colonial sites while the quartz-inlaid pottery of Nisa is still being produced today. However, the tradition of inlaying quartz in pottery in the Iberian Peninsula goes back to the 17th century (Orton et. al. 1993). All three types of inlaid earthenware have reddish surface color while the inlays are all materials that may be used as tempering agent. The fact that all three types are from roughly the same time period is astounding. Could these all be related despite the geographical divide? To any one who is familiar with Philippine history, the answer would be yes. Such a comparative study is important because to date, the porcelain-inlaid earthenware found in the Philippines has not been linked to any other inlaid earthenware types in other parts of the world.

For the purpose of this paper, the term "porcelain-inlaid earthenware" will be used rather than "blue and white porcelain inlaid earthenware" for brevity. It is also without certainty if the inlays are from blue and white vessels only, especially in the case of the two sherds from San Agustin. The inlays are too small

to show any hint of cobalt, the exposed parts of the inlays are not the surface of the porcelain, and the author has chosen not to take out the inlays at present in order to conserve the two specimens we have of this type of pottery from San Agustin Museum.

The Jump off Point: the Porcelain-inlaid Earthenware from San Agustin Museum

The Porcelain-inlaid Earthenware Found in the Philippines

The ship *San Diego* sank on December 14, 1600. From this date, it is possible to place the beginning of production of the porcelain-inlaid pottery at around the late 16th to the early 17th centuries (De la Torre 1993; Desroches Casal an Goddio 1996), a time when Spain was newly establishing its hold on its easternmost colony, the Philippines. *San Diego* was a merchant ship that was hastily converted into a warship to combat two Dutch intruders into Philippine territory. The Spaniards emerged as the victors of the war at sea. However, the price the Spaniards paid was more casualties on their side. Moreover, the *San Diego* sank, later to be found in 1991 around a hundred kilometers off Fortune Island in Southern Luzon. Based on the underwater archaeological excavation, the ship was overloaded with fine Chinese porcelain among other things that could be more than mere provision for the battle. It seemed that it was bound for a long journey to trade. Historical records also indicate that the *San Diego* was overloaded, carrying over 500 passengers which included Spaniards and natives of the Philippines alike. From the ship that was around 35 to 45 meters long and 20 meters, more than 34,000 archaeological materials were recovered from the site, including Philippine-made earthenware, 78 of which were intact and a total of 1,482 earthenware fragments (Dizon 1993; Ronquillo 1993; Desroches, Casal and Goddio 1996).

Other examples of porcelain inlaid earthenware were found in previous land excavations such as Sta. Ana, Manila, Ayuntamiento Site, Intramuros, Manila (Dela Torre 1993) Sta. Lucia and Mehan Gardens (De la Torre 2006; ACECI 2005), and Arroceros (Solheim 2006). An example of this type (Plate 2) is also present in a private collection owned by Ramon Villegas, featured in the book *-Pang-alay* as "probably Manila Ware" with the date of 17th century (Valdes 2003). An article in the same book states that blue and white inlaid earthenware can be found only in Ayuntamiento, Manila and are of the Manila Ware type, saying that local potters have resorted to unconventional designs as such in order to compete in the growing world market upon the opening of the Suez Canal (Gatbonton 2003). The article is the only reference that classifies blue and white porcelain-inlaid earthenware as Manila Ware and there is no certainty as of yet in this piece of information. Nevertheless, since whole porcelain-inlaid vessels were salvaged from the San Diego, the forms

were apparent: small vases, cups with multiple handles and an oil lamp which resembles a quartz-inlaid earthenware "basket" form **(Plate 3-A)**. There are vessels that resemble the pottery found in Calatagan, Batangas of the *"kinalabasa"* or squash-like type – there are vertical grooves in the body of some of the vessels such as that of a squash (see Main and Fox 1982). It is also in the San Diego wreck site that the porcelain-inlaid earthenware has been first found in Philippine territory. This has been described under special-purpose vessels (dela Torre 1993) and ritual vessels (Valdes 2003).

To paint a picture of the milieu of the porcelain-inlaid earthenware, we should note that the latter part of the sixteenth century in the Philippines marks the emergence of a new art in pottery, appearing to have been designed mainly for European tastes or for a local audience already influenced by European ideas (Beyer 1946; Barbosa n.d.). The typical designs of local potteries at the time seem to have been copied from medieval European glass, pewter and silverwork. According to De la Torre (1993), the tiny pieces of porcelain inlaid on the surface of the earthenware is said to enhance the overall pattern of incised designs and slight grooves running vertically around the bodies for some of the vessels. These are formed by hand and the paddle and anvil technique. It also resembles Manila Ware in the sense that its interior is not polished nor smoothed over. Still visible are the marks of the hand and anvil **(Plate 3-A and 3-B)**.

The Excavation at Fr. Blanco's Garden

San Agustin Museum was named by UNESCO as a World Heritage Site. The excavation was conducted by the Archaeological, and Environmental Consultancy, Inc. (ACECI). The team was composed mostly of students from UP-ASP and faculty from the said institution as well. A new building was to be constructed in Fr. Blanco's Garden, threatening to destroy the archaeology in the area that is why an archaeological impact assessment was immediately called for. The excavation ran from November 10 to 18, 2005 (ACECI 2005).

Three trenches were opened, guided by the known remaining structures of the Second Monastery, inside the San Agustin compound. This is in an area known today as Fr. Blanco's Garden which was the former location of the Second Monastery, some of the walls of which are still standing today. Underneath the overburden of garden soil were the structural remains of the Second Monastery. The goal was to record the structures, retrieve artifacts, and hit pre-monastery cultural deposits. (ACECI 2005).

The San Agustin compound is the oldest standing stone church complex in the Philippines, which today serves as a museum while still active in liturgical

activities. There are reports which indicate that early Augustinian buildings in the church complex were initially made of bamboo, wood and nipa. These structures were destroyed and rebuilt at least four times between 1574 and 1586 (Galende and Jose 2000). To replace these flammable materials, the Augustinians decided to use stronger materials such as heavy stones (ACECI 2005).

The construction for the second monastery began in 1624. The first two floors were finished in 1667 while the final third floor was constructed from 1861 to 1863. From the middle of the 19th century to the early 20th century, several fires and earthquakes caused minor damage. The structure was finally destroyed in 1945 during the Battle of Manila (Galende and Jose 2000; ACECI 2005).

At the end of the excavation, it was observed that "there is slight evidence that there may have been wooden structures in what was later Fr. Blanco's garden just before the construction of the monastery, but not earlier than the presence of the Spanish community in the late 1570s" (ACECI 2005).

The two sherds of porcelain-inlaid pottery were excavated from Pit 2 which is a 2 x 4m pit that was later extended to 2.8 x 4m. This pit is located between the remains of the two wall bases of the monastery. The objective of opening the pit is to understand the sequence of construction of structures and deposition sediments in the area. The main objective, however, was to detect pre-Spanish activity in the deeper levels (ACECI 2005).

The water level was reached at around 120 cm while the excavation ended at around 160 cm below LDP. There was no pre-Spanish layer exposed in this excavation. However, Spanish colonial deposits include earthenware, stoneware, porcelain, animal bones (fish, cattle and chicken, pig - some of which are charred), two human vertebrae, shells, metal fragments, nails, glass sherds and tiles. This area is said to be where a stable used to be situated and a place where workers ate their meals. On the human vertebra found, these are probably from an older deposit unearthed during the construction of the foundations of the second monastery (ACECI 2005). The time depth represented by context from which the two sherds of porcelain-inlaid earthenware were recovered from is consistent with the *San Diego,* which is the 1600s. These porcelain-inlaid sherds were used as packing material for the construction of the Second Monastery. This tells us that the porcelain-inlaid earthenware may have been in production between the years 1600 (the year the *San Diego* sank) to 1624 (the year the Second Monastery's construction began since it was used as packing material below the tiled floor). Further research might be able to stretch this range further with more confidence.

Observations on the two sherds of Porcelain-Inlaid Earthenware

Porcelain-inlaid earthenware sherds recovered from Pit 2 were characterized. The Munsell Soil Color Chart (2000) was used to describe color.

The porcelain-inlaid sherd with accession number NCR-92-J-1164 is a brown (color 7.5 YR 5/4 interior and exterior) body part with incised and circle stamped design. There are two porcelain inlays visible, the exposed part being the unglazed part. These two inlays are set alternately with the two circle stamps visible, forming a horizontal band that presumably goes all around the vessel. This band is demarcated by two parallel horizontal lines below (and presumably above because only one is visible) spaced 2 mm apart. The rest of the sherd's outer surface is incised with cross-hatchings. The orientation of the vessel is that the horizontal band of alternating inlays and circle stamps are nearer the neck or rim of the vessel while the cross-hatchings are closer to the base. It is possible that there is red slip applied over the surface which had faded because of taphonomic processes, as there are traces of yellowish red (color 5 YR 4/6) on the earthenware and inlays as well. The sherd is 4mm thick and was gotten from context 99 (around 150 cm below Datum Point) which is dark grayish brown silty sand with rubble under context 98, which is a lens of lime. Associated with this porcelain-inlaid sherd are other artifacts such as 43 blue and white sherds (most of which are arguably Swatow-style or Zhangzhou because of the sandy adherences at the bottom, crackling and small pinholes in the glaze, also dating the porcelains roughly in the 17th century) (Adhyatman 1999), three stoneware sherds, two fragments of capiz or "windowpane oyster" (*Placuna placenta*) sherds, two metal nails, two metal fragments, one geofact, one unidentified shell fragment, nine earthenware roof tiles, and ten earthenware sherds **(Figure 2)**.

NCR-92-J-1165 is a 4mm thick rim sherd with incised cross-hatch design and an estimated maximum diameter of 12.7cm (Burke and Smith 2004: 357). The rim part is slipped, therefore being red in color (soil color 10 R 4/6) while the body is brown (color 7.5 YR 5/4) which is the same as the other sherd. This brown color may be seen in the area where there is cross-hatching. The rest of the surface of the interior is redslipped (color 10 R 4/6 to 4/8). In addition, there are two porcelain inlays (color 2.5 Y 8/1 which is white) are visible on the sherd. There is also a mark left where a third inlay used to be embedded. The porcelain inlays on the other sherd is also white. One of the inlays had traces of red slip over it with a horizontal wiping direction, indicating that the vessel was inlaid first then slipped. This sherd was found in context 70 (around 90 cm below Datum Point) which is the fill of the foundation (context 32) below context 49 and beside context 71 at the northern half of the pit. The artifacts associated with NCR-92-J-1165, found in context 70 are two

stoneware sherds, four blue and white sherds, eight animal bone fragments, five earthenware body sherds and an earthenware rim sherd. These are all part of the fill, recycled material from refuse used to pack the space **(Figure 3)**.

The contexts from which the two sherds were unearthed tell us that the porcelain-inlaid earthenware sherds were refuse that were recycled as construction material. There are a total of 1190 sherds of tradeware porcelains and 702 earthenware sherds **(Figure 4-A and 4-B)**. From this and most especially the associated materials from contexts 70 and 99, it could be inferred that the production of porcelain-inlaid earthenware was low. From observation of the visible designs and shapes of the sherds, I have not matched these two sherds with their exact copy in any of the pictures and illustrations of the porcelain-inlaid earthenware of the San Diego. The possibility of it being an export item is uncertain because despite being found in the San Diego shipwreck whose cargo is said to be bound for Mexico (Kuwayama 1997), it seems that none of them have been found yet in sites outside the Philippines. The designs and forms of the vessels have high variability. The number of porcelain-inlaid earthenware can be said to be quite small for export purposes. The total number of whole earthenware vessels are only a little over 70 which includes types other than the porcelain-inlaid ones such as plain globular pots, pot covers, jars with handles, plain cups, high-neck jars, vessels with incised design, vessels with excised design, squash-like vessels, and burnished ewers (dela Torre 1993). It is more likely that the porcelain-inlaid earthenware found in the San Diego wreck were brought on board for use inside the ship. Perhaps further studies may elucidate on this area of investigation.

Into Africa and the Americas: the Feldspar-inlaid Redware

An unglazed coarse earthenware known as feldspar-inlaid redware has been found in Spanish Colonial sites in the New World with its production origins in Iberia, Panama, or Mexico **(Figure 5 & 7; Plate 4)**. The production date range according the Florida Museum of Natural History is from the 1500s through the 1600s in American centers including Panama and Mexico (http://www.flmnh.ufl.edu). However, Fairbanks argues that up to the early twentieth century, its production has continued in Mexico (Fairbanks 1966). The defining attributes of the feldspar-inlaid redware include its being thin, having dark-red unglazed coarse earthenware paste, sometimes with reddish wash on the surface. White feldspar chips are embedded on the clay for decoration, inlaid either in a pattern or at random. It is also described as "Feldspar inlay on Orange Micaceous paste or on a buff-colored earthenware paste" has been noted at sixteenth century sites in the Carribean. Vessels forms include bowls, cups, jars, pitchers, and vases. This type of pottery is

said to be "of Moorish-inspired Iberian origin" (http://www.flmnh.ufl.edu). The aspect of the pottery which is claimed to be Moorish inspired was not indicated, however.

The literature on the feldspar-inlaid redware are primarily from the Florida Museum of Natural History, and the works of Fairbanks (1966) and Deagan (1976). The feldspar-inlaid redware may be found in Huejotzingo, Puebla, Mexico; De Leon, St. Augustine, Florida; and Convento de San Francisco, Santo Domingo, Dominican Republic (http://www.flmnh.ufl.edu). It was also found in a Portuguese built structure named Ft. Jesus, Mombasa Kenya which was constructed in 1593 to protect their interests in East Africa and their trade route to India (Fairbanks 1966; http://www.oldcity.com/his2.html). No sample of this artifact has been found in the Philippines and all sources on this type of pottery are electronic data.

For Charles Fairbanks, his interest with the feldspar-inlaid redware began when he saw a collection of a type of Mexican folk pottery in 1920 at Cuernavaca. The tesserae of feldspar inlays had generally appeared to him as shell inlays. In his day, he found no information on this type when he looked into Mesoamerican or Iberian pottery. It appears to be derived from Iberia and may date as early as the 17th century. Upon writing his article, this type has been found at Fort Jesus in Mombasa, Kenya (established by Portuguese colonists) and a kiln site in the Old City of Panama (an old Spanish colonial kiln which also produced majolica) that falls under the 17th century. The pottery is characterized by a decoration of "inlays of small tesserae of feldspar and occasionally other minerals" (Fairbanks 1966). The inlays usually form a floral or sunburst design, and in one case a Mexican eagle. These are also incised, stamped, low reliefed, and has red paint. These are often associated decorative features and in some cases all design techniques are present in one vessel. In some cases there are words incised as "Recuerdo de Cuernavaca" or simply "Cuernavaca." The forms are carafe-type water bottles, small-handled pitchers, small urns with perforated vertical lugs on the shoulders, and small plates. Some are wheel thrown while some are handmade. This may represent a blend of Hispanic and Central American Indian traditions. Inlaying is said to be derived from native Mesoamerican ceramic complexes while the shapes are Spanish. The feldspar-inlaid redware's persistence until the 1920s signifies a vigorous local ceramic industry. This concept was largely based on the Tonala painted ware, the production of which preceded Spanish conquest but with the arrival of the conquistadors, Spanish shapes and floral designs were incorporated with Indian manufacturing techniques. Overall, Fairbanks states that the feldspar-inlaid redware is distinctive and easily recognizable, and that its roots may be traced back to the Iberian Peninsula.

The feldspar-inlaid redware found in the 1920s in Mexico could easily have been traded through maritime routes in the Gulf of Mexico and the Carribean Sea

in the past **(Plate 9)**. In addition, the feldspar-inlaid redware could also have been produced in or traded to Santo Domingo, Dominican Republic and St. Augustine, Florida because of its presence in the said locales.

Into Iberia: The Quartz-inlaid Pottery of Nisa

Today, inlaying of minerals or rocks in earthenware is still being practiced in Portugal. Also called Portuguese Quartz Inlay Pottery, these unglazed handcrafted vessels are made in Nisa, a municipality in the eastern edge of Portugal which borders Spain **(Plate 10).** Nisa lies near the Marvão range of mountains and Tagus River (Heritage & Kindersley 1999). Visitors of Nisa would immediately notice earthenware vessels that line the roadsides to dry before firing. The forms come in pots (*bilhas*), water pots, small water jugs (*catarinhas*), cups, and plates in all shapes and sizes.

Because the tradition of inlaying rocks on earthenware persists in Portugal to the present, we have ethnological data in our hands. In an interview of António Louro (http://www.verytypical.com/artisan_ details.asp?Cod_Artesao=2), one of the few artisans left in Nisa who makes quartz-inlaid pottery, Louro narrates that in his youth, he and his father kneaded clay together (Plates 5, 6 & 7). The clay had to be moistened, kneaded, removed of sand and left to rest. After six days, to test the consistency if it is just right to be worked with, they threw the clay on the wall. Today, Louro uses a machine to knead the clay. He claims that the consistency is better when kneaded mechanically. By hand, almost all of the sand was lost through sifting. The clay is thrown on a wheel and it is said that the eyes and hands were never taken off the clay as well as the left foot from the pottery wheel because this could be detrimental to the perfection of the vessels' shape. After forming, the pieces are applied with red slip then motifs are carved into its surface with the use of a stiletto. The *Pedradeira*, usually the wife of the potter according to tradition, puts the bits of quartz into the engraved motifs while the clay is still wet. Each piece requires an enormous amount of time and effort in inlaying, requiring Louro to call the aid of his wife and other women in the village. Women are the only ones who inlay because their hands are believed to be delicate enough for the task. It takes about four hours to inlay two catarinhas which may also be altered by the motif (which are usually flowers, leaves, acorns, spiders, thimbles, nails, wine-leafs or hearts) and the size of the fragments of quartz. Women rest the pieces on their laps while inlaying, handpicking each piece of stone they think is suitable among several ones available. The bits of quartz are tread in with the fingernails one by one until the carved motif is fully rendered in shiny specks of quartz (Chabot 2006).

Potters source both clay and quartz in Nisa which may be found in the surrounding fields. These are heated slightly to be broken more easily into tiny

bits. This art is said to be unique in Portugal and that its origin has been lost in time (http://www.verytypical.com/artisan_ details.asp?Cod_Artesao=2). It says however that the tradition was of Muslim influence. A.D. 711 is the year that Moors conquered the Iberian peninsula (Keefe et. al. 1977). The last independent Muslim polity in Iberia, the Kingdom of Granada, was destroyed in 1492 (Kennedy 1996; Arcilla 1998). This may be why *catarinhas* are also called Byzantine jugs (http:// www.verytypical.com/ artisan_details.asp?Cod_Artesao=2). A great part of Portuguese culture has been influenced by the "Moors." This is particularly evident in loan words in the language and the structure and instrumentations of popular music. It is also significant to note that the Muslim settlers in Lisbon were not merchants but artisans. Most of these were potters while others were blacksmiths, glass-makers, carpenters, and the like (Subrahmanyam 1993).

These modern quartz-inlaid vessels are meant to be used for decorative purposes since the clay is unglazed (http://www.verytypical.com/ artisan _details.asp?Cod_Artesao=2). The site also claims that the art of ornamentation – the inlaying – is ancient and that no two pieces are exactly alike (www.colorsofportugal.com).

Examples of Portuguese quartz-inlaid pottery from earlier time periods have yet to be found. However, as mentioned twice above, examples of inlaid pottery were recovered from Fort Jesus in Kenya which was established by Portuguese colonists during the early African colonization. The Fort Jesus pottery was inlaid with feldspar and is related to a feldspar-inlaid redware found in the 1920s, although the former appears cruder and rougher (Fairbanks 1966). With the finds in Kenya, he concluded that this represented an Iberian ware common to both Portugal and Spain. The feldspar-inlaid redware found in Kenya could be a predecessor of the quartz-inlaid pottery, or a foreign adaptation of the quartz-inlaid pottery which used feldspar as an alternative to the possible lack of quartz or abundance of feldspar or other minerals overseas.

Discussion: Coming Full Circle

Philippine Ties with Portugal, Mexico and Spain

The Philippines, Portugal and the Americas were linked by international trade around the 16th to 17th centuries, when all the three types of pottery are believed to have been produced (**Plate 11**). Spanish ties with the Americas and Philippine are manifested overwhelmingly in historical records and archaeology.

The Philippines and Mexico are culturally connected with Portugal through direct trading and Portugal's involvement in the Galleon Trade. Not much has been written about Portuguese-Philippine relations during the 16th to 19th centuries since

the focus has been more with Spain. Portugal was directly trading with the Philippines and Mexico at the turn of the 17th century although in small quantities. The Portuguese were participants in the maritime trade of South China in the 16th century other than Chinese merchants, investors, junk owners, and tribute traders from Southeast Asia and the Spaniards. Their involvement in the inter-Asian trade was intense. In the early 17th century, there were also times when local workers in the Philippines loaded merchandise in Portuguese vessels for shipment to Mexico (Souza 1986). In the Galleon Trade (the Acapulco-Peru-Philippines route), the Portuguese New Christians played an important role (Subrahmanyam 1993) (Souza 1986)." Aside from its aggressive involvement in trade, Portugal expanded and defended its economic interests in the South China Sea throughout the 16th and 17th centuries by conquering and occupying the Moluccas and the eastern Indonesian archipelago thus gaining control of various spice-producing islands with the goal of monopolizing the supply of cloves, nutmeg and mace in Europe.

The ties between the Philippines and Spain during the Galleon Trade also connect us to Portugal due to proximity, the two countries being part of the Iberian Peninsula. In April 1581, King Philip II of Spain was officially acknowledged ruler of Portugal (Subrahmanyam 1993). Also, the 1590s to 1620 was marked by a period of cooperation between Spain and Portugal against the expanding Dutch forces (Schurz 1939; Souza 1986). Indeed, the arrival of Dutch and English ships in Southeast Asian waters in the 1600s profoundly changed the balance of trade (Reid 1999) prompting military action from Spain and Portugal. Furthermore, Nisa, Portugal borders Spain. The Tagus River, enabling an easy flow of cultural exchange, also connects the municipality of Nisa to Spain.

Three Types of Inlaid Earthenware: Feldspar, Quartz and Porcelain-Inlaid

There are striking similarities between the porcelain-inlaid earthenware, quartz-inlaid pottery of Nisa, and the feldspar-inlaid redware. Apart from approximately the same time period of production, all three are inlaid with tempering material. Quartz and feldspar are two of the three most common inclusions in pottery, usually added as temper. These are also naturally occurring impurities in the clay (Rice 1987), a fact which does not make it difficult to imagine why potters may have gotten the idea of inlaying bits of these minerals instead of using them plainly as temper. Feldspars are the most common minerals that are stable at the temperatures employed by primitive potters. It also played an important role in the advanced stages of ceramic development. Similarly, quartz is a major constituent of common tempers and does not appear to change under low firing (Shepard 1995). High fired (at 1000º C) ceramic sherds such as that of blue and white Chinese wares to name a few may be considered "grog" - ground brick, tile

or other fired products – materials heated at high temperature before use as temper (Shepard 1995). Since pottery is considered as "artificial stone" (Rice 1987), porcelains are no different from feldspar and quartz (common components of most rocks) in the sense that they can be considered "stone". It may even be said that the three types may be collectively called "stone-inlaid pottery."

The feldspars form, if not the most important group of minerals, the most important of silicates. Found as essential constituents of most crystalline rocks such as granite, basalt and many others, they make up a large percentage of the earth's crust (Hurlbut 1949). The kind of feldspar used in the feldspar-inlaid redware was not mentioned in our sources. Quartz on the other hand is the most common mineral, and one of the most beautiful in some of its varieties. It occurs as a rock of sandstone and quartzite, and it makes up most of the sand of seashores. It is an important constituent of other rocks such as granite and gneiss. There are many varieties, the uses of which are in optics, ornamentation and jewelry (Hurlbut 1949). The type used in Nisa seems to be the white kind called milky quartz. Its color is caused by the presence of small liquid inclusions (Hurlbut 1949). Since modern day potters in Nisa utilize the readily available resources for inlaying, the same as their clay source. After all, quartz is a common tempering material that may be present in clay.

Other archaeologists have also noticed that inlaying in earthenware of stones or minerals is not unique to the Philippines. Tanaka (2006) stated that there is pottery found in Mexico that is similar to the porcelain-inlaid earthenware found in the Philippines. He may well be talking about the feldspar-inlaid redware. He asserts, however, that the aforementioned type of pottery found in Mexico and porcelain-inlaid earthenware are not the same.

The Practice of Inlaying

The practice of inlaying on the surface of earthenware vessels is distinctive despite the myriad of ways through which the surface of pottery is modified either intentionally or unintentionally. Surface coatings such as slips, pigments, paints, washes and glazes are distinct from the unintentional effects of firing, when colors are produced by oxidation, reduction, firing clouds and deposition of carbon. The surface of pottery may be finished by smoothing, burnishing, and polishing. Cutting techniques include carving, combing, drilling, incising, perforating, piercing, and for glazed wares sgraffitto. Displacement of clay is another technique, the examples of which are impressing (punctuating or stamping), rouletting, and sprigging. Joining techniques are also used, the most common being application or appliqué and modeling. The tools that are used in performing these decorative techniques are as

diverse (Rye 1981).

Inlaying in general is widespread and may be repeated in any part of the world. An example of inlaying as a widespread practice would be the Koryo inlaid celadon, the technique of which was invented in the latter half of the 12th century (Seung et. al. 2002). However, the raw material used for inlays, the characteristics of the clay being inlaid and the designs created by inlaying is diverse. Other materials aside from clay has long been applied or added to the surface of the pot if they could withstand the firing temperature. An example is mica which is applied to some vessels during the Roman Empire as a slip. The same principle goes for the use of mineral inlays such as quartz or feldspar in pottery (Orton et. al. 1993).

Similarly, porcelain was used as inlays in the past and at present. A common example would be a mosaic of tiles. Blue and white porcelain inlays were used in fashioning other things such as palaces and tombs which has been a practice in Bali, Java and South Sulawesi of (Esguerra 2004). In the Americas, porcelains also took on an architectural role. In the 17th century when the art of porcelains became important, *talavera*, a type of Puebla ware, was developed to a high level and it was the only product able to compete with Chinese porcelains. In Mexico, whole facades of buildings were covered with glazed tile called *azulejos* (Toussaint 1967). Although feldspar-inlaid earthenware are found in the Americas, Dr. William Longacre (2006) from the University of Arizona says that porcelain-inlaid earthenware are absent in the known archaeological record (pers. comm. Longacre 2006).

In the Philippines, an early example of inlaying nonplastics in pottery was described as "one sherd [that] has a band of impressed circles which have been filled with lime" (**Plate 8**). It was also redslipped. This was collected from the 1967 survey of Jolo in Sanga Sanga. The sherd was part of the 463 sherds found at the surface and from test excavations in the rock shelter at Balobok. Spoehr (1973) believes that Sanga Sanga pottery is closely related to the Tabon pottery complex from the Tabon caves of Palawan which dates back to the Late Neolithic and Metal Ages of Palawan or ca. 1,500 B.C. to A.D. 500 but Solheim (2006) says that it is much earlier – around 4,000 B.C. Redslipped pottery with mineral infilling was also found in Ille Cave, El Nido Palawan (Paz and Ronquillo 2004). However, this is not related to the porcelain-inlaid earthenware because the gap in time between the two is too great to argue for a connection (Solheim 2006). However, it is possible that this was not a case of inlaying, but rather, white lime was used to coat the entire vessel with circle stamped designs. Hence, the lime left in the circle impressions were not inlaid intentionally but turn out to be traces of a coating meant to cover the entire vessel's surface (Paz and Ronquillo 2004).

Inlaying in general may be pervasive but inlaying of bits of minerals and porcelains on earthenware is a distinctive practice, as mentioned earlier. All three

types of inlaid pottery have a reddish surface color aside from being inlaid. The porcelain-inlays in the Philippine type are combined with geometric incised design and for some pieces, also notches, pricks and appliqué. There is also an example of a porcelain-inlaid cup from the Philippines which has a pair of applied zoomorphic vertical lugs, the vessel having been pricked and notched. On the other hand, the feldspar-inlaid redware may be for a particular vessel inlaid only, incised and inlaid, then molded an inlaid while the stoned pottery of Nisa are inlaid only, often following creating a floral design. The forms of the feldspar-inlaid redware and quartz-inlaid earthenware can be traced back to Moorish influence while the inlaying component could be more of a Central American influence (Fairbanks 1966). Through the galleon trade, Filipino potters may have been exposed to this type of pottery, using locally available porcelain refuse as inlays instead of quartz or feldspar. In any case, tesserae of porcelains are usually white or light gray which strongly resemble bits of white quartz and feldspar. The forms of the porcelain-inlaid earthenware are local, however, which strengthens the idea Philippine potters were the makers (dela Torre 1993). As exhibited by Manila Ware, Filipino potters since the late 16th century were copying foreign ceramics, resulting to another type (Beyer 1946). It can be said that the porcelain-inlaid earthenware is a Spanish colonial example of reuse in the Philippines as evident in the utilization of porcelain sherds that would have been otherwise practically useless. Before the 1900s in the Philippines, porcelain was entirely coming from outside the country. Porcelain that was already broken may have been broken further into smaller pieces and used as inlays on earthenware. Also, the porcelain-inlaid earthenware in the Philippines could have been experimental and later failed in the market. Compared to the feldspar-inlaid redware and the quartz-inlaid pottery, the arrangement of the inlays in porcelain-inlaid earthenware is sparser and less complex.

Only the Quartz-inlaid Earthenware Persists Today

The survival of the feldspar-inlaid redware into the 20th century in Mexico is very much reflected in the study of Kathleen Deagan in At. Augustine Florida. In the 16th century, St. Augustine was a very small settlement and mission, with 425 people living in 120 households by the end of the century (Deagan 1983, 1991). Only 30 percent of them were women, with half of the female population being Spanish. The rest of the women were either Indian wives or concubines (Fagan 2005). Spanish Colonial Sites have more native and imported porcelains. The strong Spanish porcelain tradition was an effect of a flourishing export trade and the custom of suppressing native populations through a system that bound their labor to Spanish masters. Majority of Spanish settlers were males so the incorporation of local

women into their households brought in local porcelains. Spanish interaction in St. Augustine was based on religious conversion, intermarriage and tribute and even though the Spanish population was physically integrated with local populations, a rigid structure based on racial classifications was maintained. As revealed by the St. Augustine excavations, "Spanish colonists lived in a structured and highly organized social environment, an environment reflected by a tightly patterned material record (Fagan 2005)."

As for the Stoned Pottery of Nisa, Portugal, the present pottery industry is flourishing, the products being made for export and tourists (www.colorsofportugal.com).

Summary and Conclusion

Having seen the historical and archaeological connection between the places wherein these three types of inlaid earthenware were found, there is also reason to believe that there is a relationship in terms of design concept between the porcelain-inlaid earthenware found in the Philippines, the quartz-inlaid pottery and the feldspar-inlaid redware of the Americas and of Kenya. This is because the Philippines, Portugal and the Americas were linked through maritime trading and Western colonialism within the period that all three types of pottery are speculated to have been produced. Nonetheless, the Portuguese built a fort in Mombasa, Kenya in the 1600s, leaving behind traces of their material culture. This signifies an exchange in influences in the realm of pottery making since it interacts with people very closely and is a commodity wherein competition was tight.

Feldspar and quartz-inlaid pottery seem to be more closely related in that it is easy to replace the type of mineral being inlaid depending on what is available and aesthetically pleasing. Feldspar-inlaid redware has been found in a Portuguese colonial site in Kenya and the ones found in the Americas show a mix of Iberian (in form) and Native American (when it came to the art of inlaying) designs (Fairbanks 1966).

The porcelain-inlaid earthenware is distinctively a Philippine (dela Torre 1993) or Luzon type not only because the inlay material is porcelain (different from minerals) but because of some of its forms – the "kinalabasa" shape – which are telling characteristics of the pottery complexes in Batangas (Main and Fox 1982). It also requires a leap in the imagination to not just replace or choose between minerals but to recycle porcelain instead as inlays on earthenware.

There is a need to look more closely into the porcelains of Iberia and the Americas in the study of Historical Archaeology in the Philippines. The focus has been more on the porcelains of China and Southeast Asia. It may be important to

try to determine the source and dates of the porcelain inlays, or if in other cases stoneware was used. An ethnographic study is also suggested to be conducted in the pottery of Nisa, Portugal. Dr. Tanaka has recently expressed his intentions of studying the inlaid wares in Mexico, the results of which may elucidate on this topic.

In relation to the porcelain-inlaid earthenware found in the Philippines, we could also look at the Loboc pottery complex for comparison in the future. This is porcelain age pottery (made probably in the 17th to early 19th centuries) found in Bohol and Cebu, some of which are said to resemble Manila Ware (Solheim 2002).

There are also other topics for study such as kilns, standardization, distribution, production, and the like when it comes to the porcelain-inlaid earthenware. There is an added step here in the *chaine operatoire* that deals with the sourcing, processing and inlaying of materials for inlaid earthenwares. It may be of interest to find out how potters procure bits of porcelain. Did the potters use broken porcelain from their household or obtain it from some sort of junk shop? It may be possible that this type of pottery was made in kilns which also produced Manila Ware, or the firing technology involved may have been the same used with Manila Ware since the two types are contemporaneous and somewhat resemble each other physically. We can also look into the hierarchy and heterarchy of the society using this type of pottery.

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www.colorsofportugal.com

www.oldcity.com/his2.html

http://www.reliefweb.int/mapc/amer_cac/reg/reg.html

http://en.wikipedia.org/wiki/Nisa,_Portugal

www.flmnh.ufl.edu/histarch/staugustine.htm (Historical Archaeology at the Florida Museum of Natural History)

Acknowledgements:

I'd like to thank Dr. Victor Paz for giving me the jump start to write and the ACECI for the opportunity to participate in the excavation at San Agustin wherein the two sherds that started it all were found; for Dr. William Longacre for his interest in the subject; Dr. Kazuhiko Tanaka for remembering me at the drunken videoke nights at the field in Penablanca, Cagayan Valley and sharing his ideas, the National Museum of the Philippines and Ms. Amalia dela Torre without whom the porcelain-inlaid earthenware would remain unknown; Dr. Wilhelm Solheim, to whom I dedicate this article, for believing; Dr. Miksic for taking the time to comment; Dr. Armand Mijares for his input; Cynthia Valdes for her generosity in lending me her ear as well as her books; Mary Jane Louise Bolunia for sending me a crucial article I've been trying to find for months; Rojo Padilla for the caffeine-and-sugar-induced talks; and Mom for still opening the front door every night when I come home.

Abstract

Two sherds of earthenware that were decoratively inlaid with chips of broken porcelain called "porcelain-inlaid earthenware" were unearthed in the 2005 Archaeological Impact Assessment of ACECI in San Agustin Museum, Intramuros. This led to this preliminary research on the origins and distribution of this type of pottery, revealing similar types present in Iberia, the Americas and Africa. The article presents a connection between our local type of inlaid earthenware with those found in the aforementioned regions as suggested by archaeological, ethnological, and historical data while establishing that the porcelain-inlaid earthenware found in the Philippines is, although related, a distinct local type.

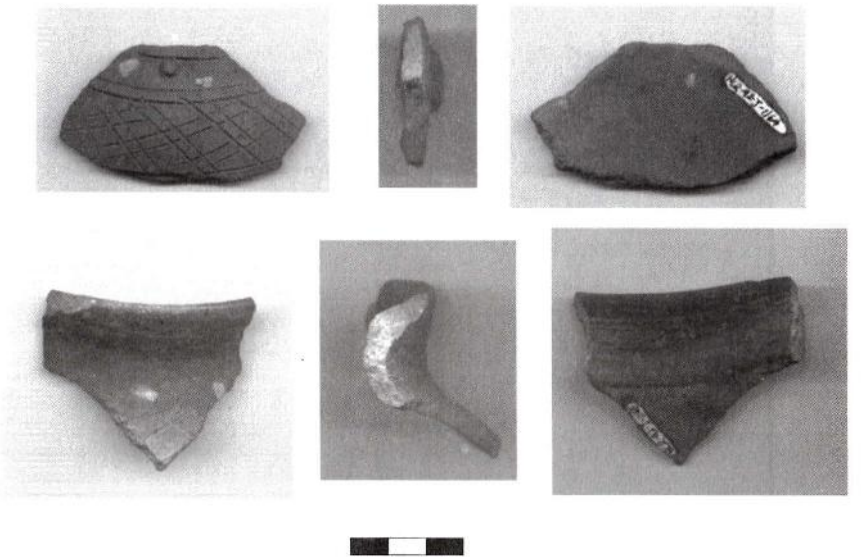

Plate 1. Pot sherds from the 2005 AIA of the San Agustin Museum. Top row: NCR-92-J-1164 (body part) front, side and rear views; Bottom row: NCR-92-J-1165 (rim part) front, side and rear views.

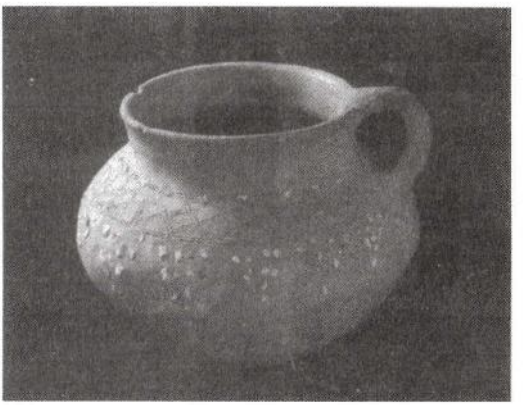

Plate 2. Ceramic inlaid earthenware pot from the Ramon Villegas Collection. (Source: Valdes, C. (ed.) 2003. Pang-alay Ritual Pottery in Ancient Philippines. Philippines: Ayala Foundation.)

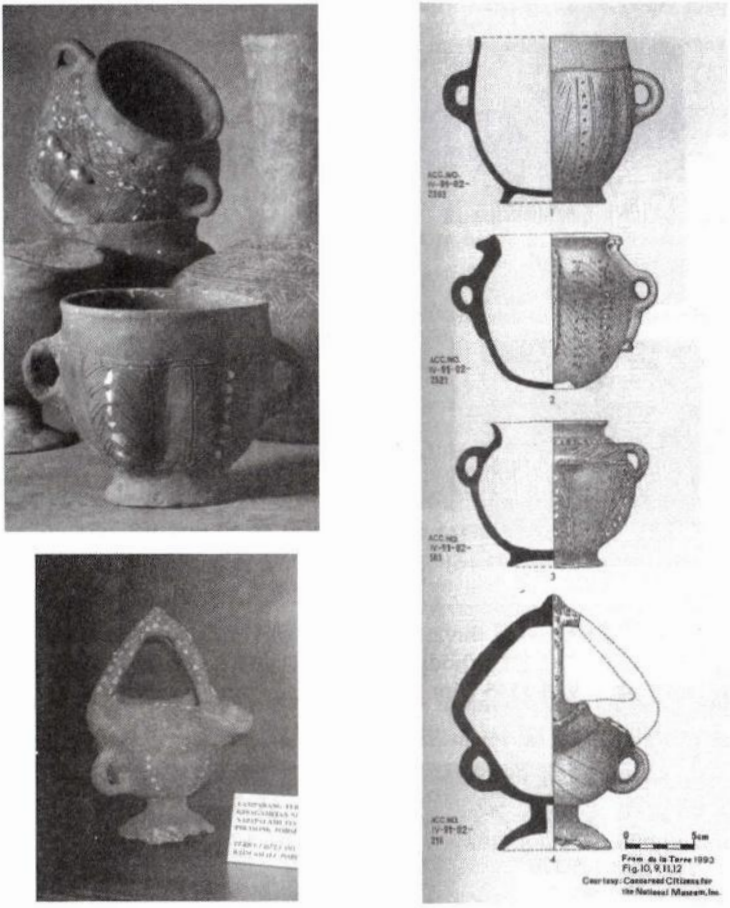

Plate 3A. Photographs and illustrations exhibiting the various forms of the ceramic inlaid earthenwares from the San Diego shipwreck.

Sources:

dela Torre, A. 1993. Potteries of the Period: A Preliminary Analysis of Potteries Retrieved from the San Diego Shipwreck. *Saga of the San Diego*. Concerned Citizens for the National Museum, Inc. Vera-Reyes, Inc. Philippines.

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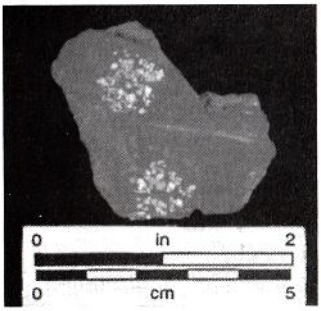
Plate 3-B. Ceramic-inlaid earthenware in the museum exhibit of the San Diego shipwreck in Fort San Pedro, Cebu City, Cebu. (Photos taken by the author and with permission from the museum)



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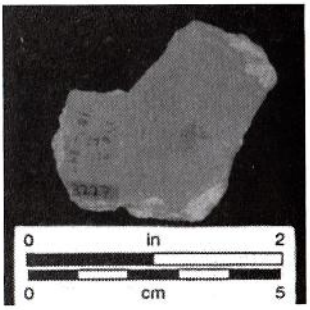
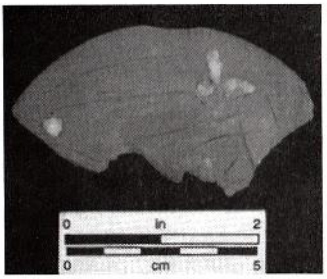


3227 back



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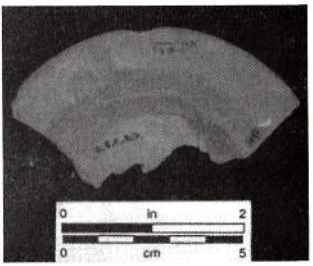

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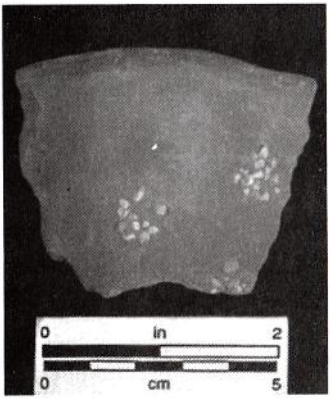

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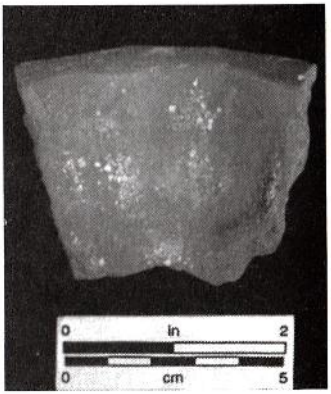


3019 back

Plate 4. Example of three feldspar inlaid redware sherds from the Florida Museum of Natural History from Spanish Colonial Sites in the Americas (www.flmnh.ufl.edu/histarch).

Plate 5. Map of the Gulf of Mexico and the Carribean Sea. (http://www.reliefweb.int/mapc/amer_cac/reg/reg.html)

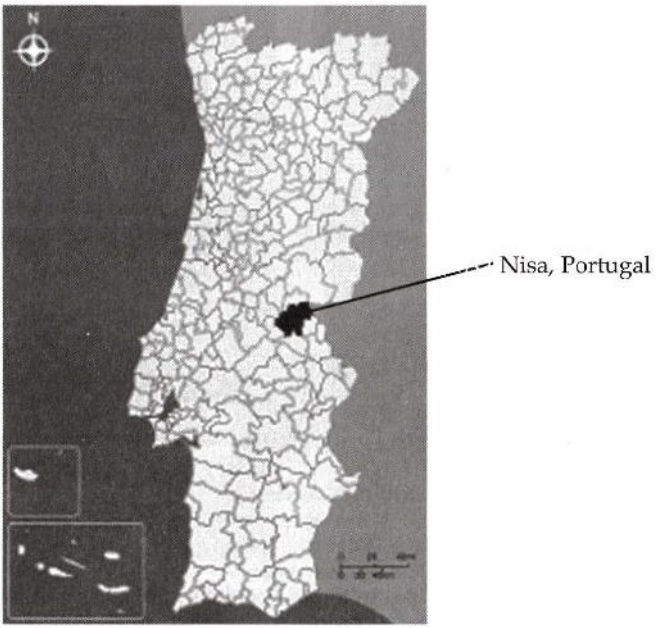
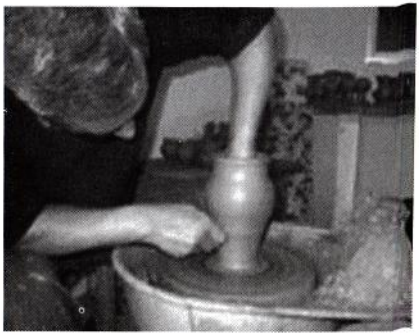
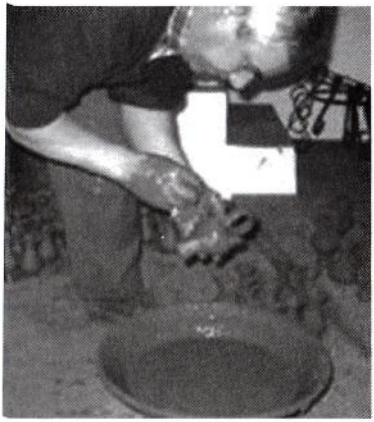


Plate 6. Map of Portugal showing the Municipality of Nisa. On its eastern border is Spain. (http://en.wikipedia.org/wiki/Nisa,_Portugal)



The potter forming the stoned pottery on a fast wheel.

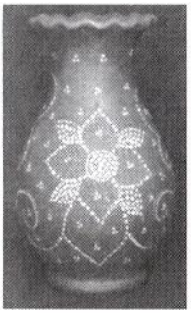


Application of red slip to the stoned pottery.

Inlaying of bits of quartz on the pottery performed by women. Each piece is inlaid one by one from a bunch of quartz bits on a small pile on the table.

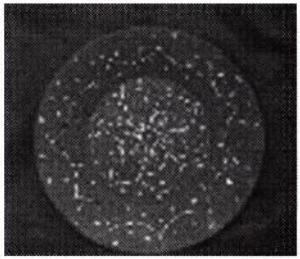
A woman selling quartz inlaid pottery in a shop in Portugal.

Plate 7-A. Forming, slipping, inlaying and selling of quartz inlaid pottery/ Stoned Pottery of Nisa in Portugal.
Source:
www.verytypical.com/ artisan_details.asp?Cod_Artesao=2
www.colorsofportugal.com



vase
height: 20 cm

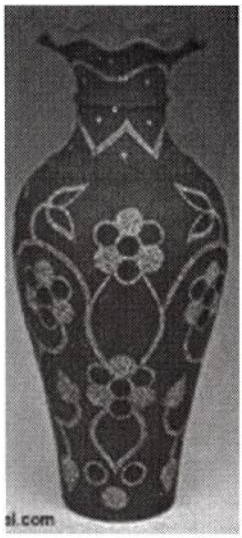
jug



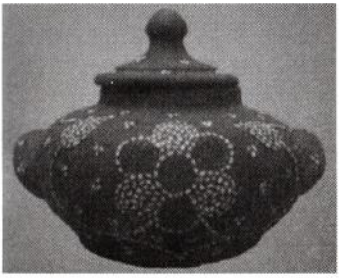
plate

basket

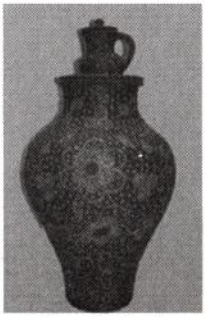
Two pitchers with molded/ carved design without inlay, also from Nisa



large clay vase
height: 53 cm (20.9 in)
width: 23 cm (9.1 in)
weight: 5 Kg (11 lbs.)



jar with lid



small water jug/
(catarinha)
height: 38 cm (15 in.)
width: 19 cm (7.5 in.)
weight: 2 Kg (4.4 lbs.)

Plate 7. Forms of the Stone Pottery of Nisa.
(www.colorsofportgal.com)

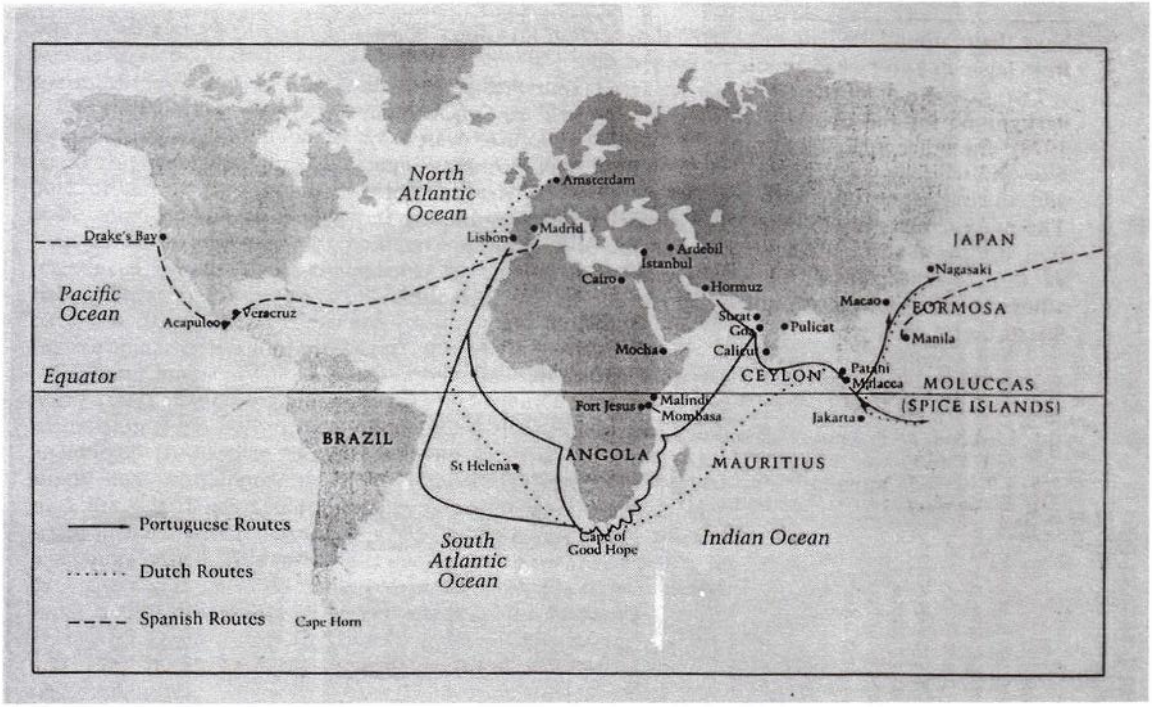


Plate 8. Map of the world showing the international maritime trade routes in the 16th and 17th centuries. (Harrisson, B. 1995. *Later Ceramics in Southeast Asia: Sixteenth to Twentieth Centuries*. Kuala Lumpur: Oxford University Press.)

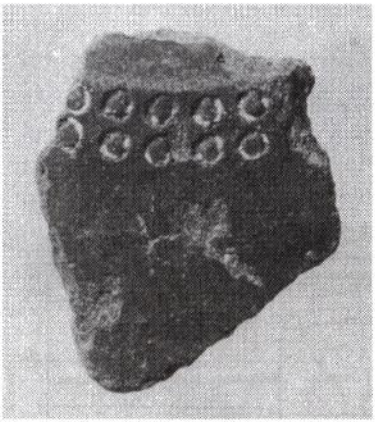
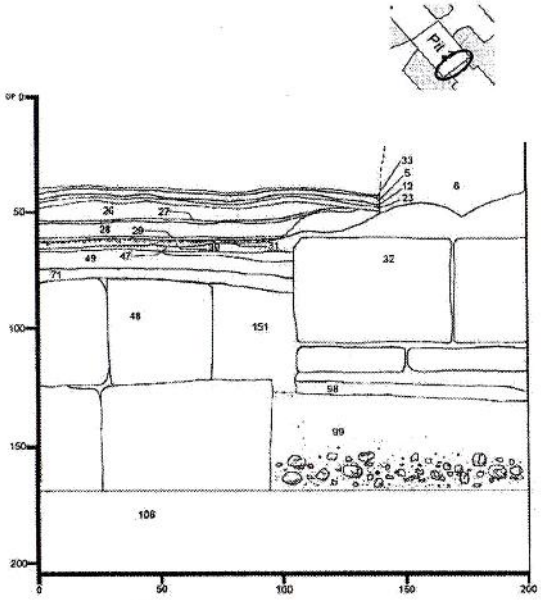


Plate 9. Sanga Sanga Rockshelter sherd. Red slip sherd with lime-filled circular impressions found along with check impressed sherds. (Spoehr, A. 1973. Zamboanga and Sulu: An Archaeological Approach to Ethnic Diversity Ethnology Monographs #1. USA: Department of Anthropology, University of Pittsburgh.)

Figure 1. Rendering of the potsherds using Adobe Photoshop 7.0 and Microsoft Word 1997. Top row: NCR-92-J-1164 (body sherd); bottom row: NCR-92-J-1165 (rim sherd).



5	tiled floor
6	buttress remains at the north wall
12	first lime layer under context 5 (1.5 cm)
23	layer of packing material
26	thin mid grayish brown sandy layer under packing material
27	second lime layer (0.5-0.7 cm)
28	second packing layer
29	third lime or cement layer (2 cm)
31	third packing layer (fill) under context 29
32	foundation of context 6 made of adobe blocks
33	topsoil with grass above context 5
39	mid grayish brown silty sand layer under context 29
47	fourth lime layer (1 cm)
48	square structure at the southwest quadrant
49	light grayish brown silty sand with pebbly white rubble
71	silty sand flood deposits (black and greenish brown mottling) below 49 and beside context 70 (overlapping mid greenish brown, dark brownish black and light grayish brown)
98	*paliiada*/lime at 86 cm below local datum point northwest corner and attached to context 32
99	dark grayish brown silty sand with rubble under context 98
106	structure localized at the western half of the pit, under context 48, beam for two foundations
151	construction debris beside context 48 at the west wall of the pit

NOTE: Packing materials consist of broken tiles, pebbles and lime in mid grayish brown silty sand.

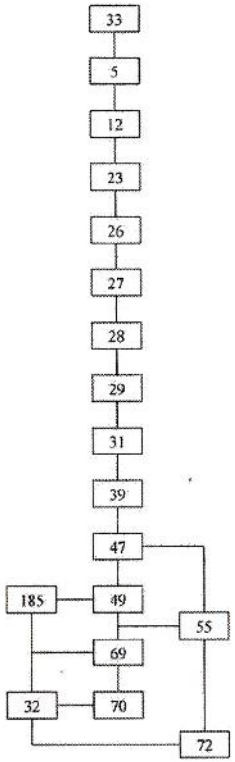
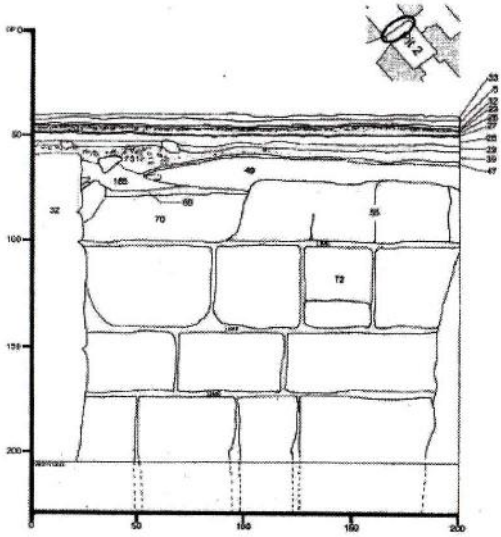


Figure 2. West wall of Pit 2 showing the vertical profile, their contexts (with their assigned numbers), and their relationship with each other through the Harris matrix. Context 70 is visible. (ACECI. November 2005. *Archaeological Impact Assessment: Excavation at the Site of the Second Monastery, San Agustin Museum*)



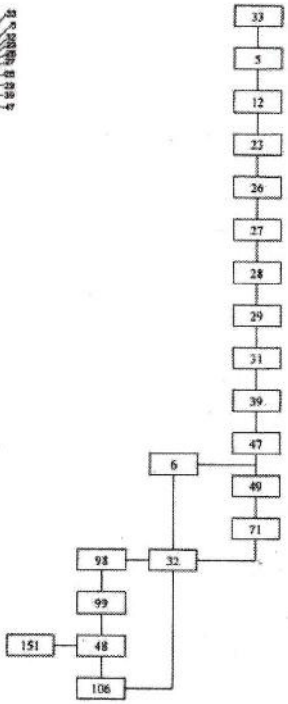


Figure 3. East Wall of Pit 2 showing the vertical profile, their contexts (with their assigned numbers), and their relationship with each other through the Harris matrix. Context 99 is visible. (ACECI. November 2005. *Archaeological Impact Assessment: Excavation at the Site of the Second Monastery, San Agustin Museum*)

San Agustin AIA 2005 Artifact Count

Artifact	Number of Pieces
brick sherds	27
ceramic figurine	1
earthenware sherds	702
earthenware stove	2
flower pot sherds	3
glass shards	183
metal fragments	39
modern glass	9
modern tiles	14
porcelain buttons	2
shells	98
modern ceramic sherds	10
tradeware ceramics	1196

Figure 4-A. Table showing the number of artifacts per category from the 2005 AIA of San Agustin.

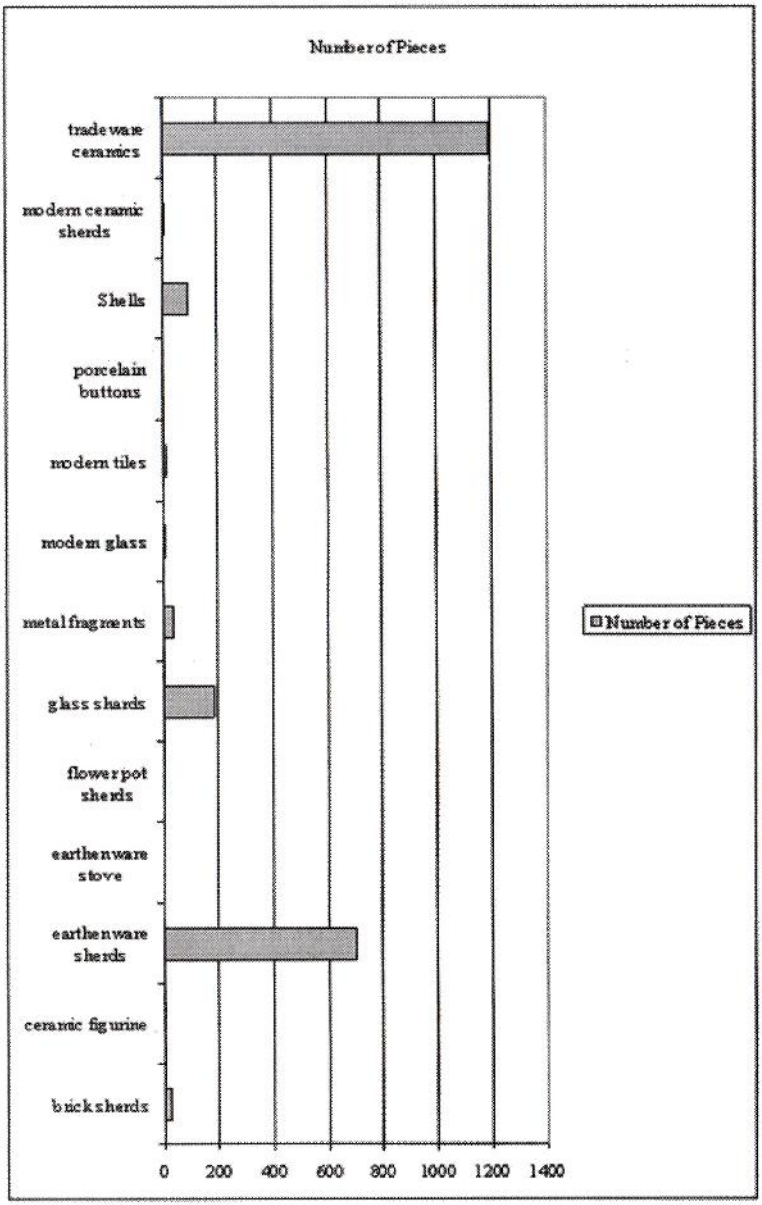


Figure 4-B. Comparison of the number of artifacts excavated in the 2005 AIA of San Agustin Museum. (ACECI. November 2005. *Archaeological Impact Assessment: Excavation at the Site of the Second Monastery, San Agustin Museum*)

Specimen Number	Collection	Location of Recovery and Site	Published Venues	General Description
3002	Illustrated Collection	Florida, St. Augustine; 8-SA-26-1, De Leon	Deagan (1987)	bodysherd inlaid with feldspar fragments
500	Historical Archaeology Type Collection	Mexico, Puebla; Huejotzingo	None	bodysherd inlaid with feldspar fragments
501	Historical Archaeology Type Collection	Mexico, Puebla; Huejotzingo	None	bodysherd inlaid with feldspar fragments
502	Historical Archaeology Type Collection	Mexico, Puebla; Huejotzingo	None	bodysherd inlaid with feldspar fragments
3092	Illustrated Collection	Dominican Republic, Santo Domingo; Convento de Sa Francisco	Council (1975)	possible foot rim sherd with incised design and inlaid with feldspar fragments
3093	Illustrated Collection	Dominican Republic, Santo Domingo; Convento de Sa Francisco	Council (1975)	possible foot rim sherd with incised design and inlaid with feldspar fragments
3227	Historical Archaeology Type Collection	Mexico, Puebla; Huejotzingo	None	bodysherd with incised design and inlaid with feldspar fragments
3212	Illustrated Collection	Florida, St. Augustine; 8-SA-26-1, De Leon	Deagan (1987)	handle with carved animal head and inlaid with feldspar fragments
3019	Illustrated Collection	Mexico, Puebla; Huejotzingo	Fairbanks (1973)	rim sherd fragment with inlaid feldspar fragments
3020	Illustrated Collection	Mexico, Puebla; Huejotzingo	Fairbanks (1973)	bodysherd fragment inlaid with feldspar fragments and molded design
551	Historical Archaeology Type Collection	Mexico, Puebla; Huejotzingo	None	bodysherd fragment inlaid with feldspar fragments

Figure 5. Catalogue of feldspar inlaid redware in the collection of the Florida Museum of Natural History, Historical Archeology Section. (http://www.flmnh.ufl.edu)

	FELDSPAR INLAID REDWARE	BLUE AND WHITE CERAMIC INLAID EARTHENWARE	STONED POTTERY OF NISA
FOUND IN	Spanish Colonial sites in Florida, USA; Santo Domingo, Dominican Republic; Mexico; Panama and a Portuguese Fort in Mombasa, Kenya	Philippines – San Diego shipwreck; Arroceros, Intramuros, Mehan Gardens, and Sta. Ana in Manila	Portugal (also exported abroad)
MADE IN	Iberia/ Panama/Mexico	Philippines	Portugal (especially Nisa)
TIME PERIOD	ca. 17th century to the 1920s	late 16th - 17th centuries	present (but tradition of inlaying quartz in pottery is said to go back to the 1600s)
FORMS	carafe type water bottle, small handled pitchers, small urns with perforated vertical lugs on the shoulders and rounded bases, small plates (pitchers, plates and water bottles generally have a ring foot)	cups, "basket" (pouring vessel with pedestal foot, two vertical loop handles attached to the lower walls, double stirrup handles attached to the rim), jars, and pouring vessels	pots (*bilhas*), water pots, small water jugs (*catarinhas*), cups, and plates in all shapes and sizes
MODE OF DECORATION	incision, stamping (rosettes and other figures), low relief	incision and putting vertical grooves around the body, zoomorphic application, pricks and notches, burnishing	inlaying only, molding
SURFACE COLOR **FORMING TECHNIQUE** **INLAY MATERIAL**	red paint (lines of red or brown pigment) carafes seem to be wheel-thrown, some jars appear to be hand made feldspar (usually quite white) and occasionally other minerals (which may be black)	reddish, reddish brown, maroon (slipped) hand made, and paddle and anvil high fired ceramics (1000° C and up) – possibly blue and white porcelain or stoneware (ceramics with white paste)	reddish, reddish brown (slipped) fast wheel white quartz (possibly also the transparent kind)
INLAY DECORATION/ PART INLAID	designs are arranged in bands around the circumference of the vessel, stylized floral or sunburst designs and in one case an elaborate Mexican eagle	among or in between incised designs	flowers, leaves, acorns, spiders, thimbles, nails, wine-leafs or hearts
REMARKS	hard earthenware with reddish tan to buff paste, tempering material is fine sand (very minimal), some have incised inscriptions "Recuerdo de Cuernavaca" or "Cuernvaca," made in kilns which also produced majolica	similar to Manila Ware in that the interior is not polished or smoothed over and the marks of the hand and anvil are still visible	the source of clay and quartz are obtained locally in Nisa

Figure 6. Characteristics of the three types of stone inlaid earthenwares. Sources:

dela Torre, A. 1993. *Potteries of the Period: A Preliminary Analysis of Potteries Retrieved from the San Diego Shipwreck.* Saga of the San Diego. Concerned Citizens for the National Museum, Inc. Vera-Reyes, Inc. Philippines.

Fairbanks, C. H. 1966. A feldspar inlaid ceramic type from Spanish colonial sites. American Antiquity 313:430-32.

www.colorsofportugal.com

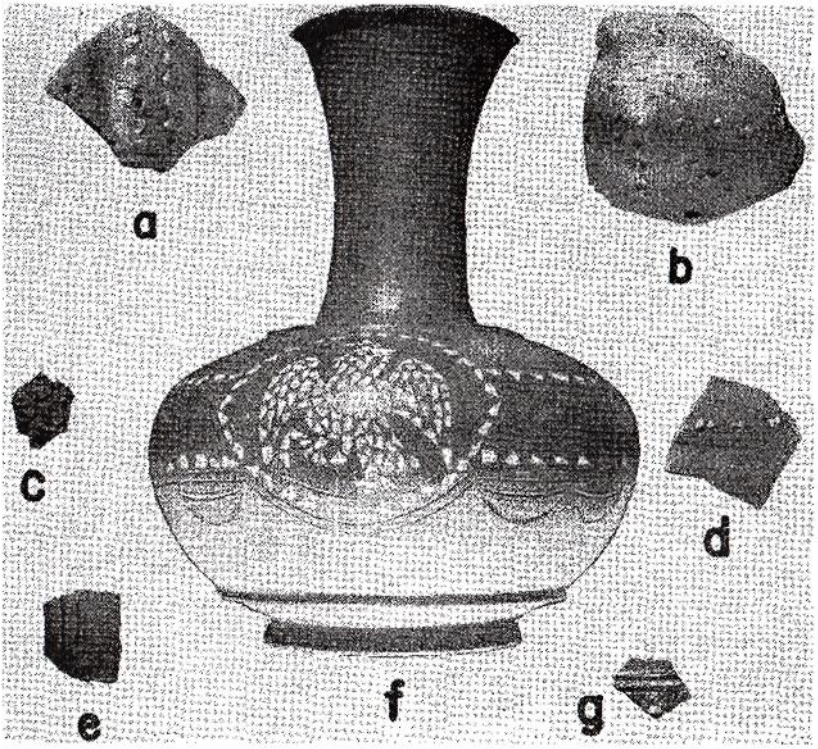


Figure 7. a, b, d, and g from a Spanish colonial kiln in Panama Vieja; c and e from Fort Jesus, Mombasa, Kenya; and f from Cuernavaca, Mexico ca. 1920 (height is approximately 22.5 cm). (Fairbanks, C. H. 1966. A feldspar inlaid ceramic type from Spanish colonial sites. American Antiquity 313:430-32)